

PTO 05-2280

CY=JA DATE=20000114 KIND=A  
PN=12-013697

TELEVISION PROGRAM RESERVATION DEVICE AND  
RECEIVER WITH PROGRAM RESERVING FUNCTION  
[Terebi bangumi yoyaku sochi oyobi  
bangumi yoyaku kino tsuki jushin sochi]

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UNITED STATES PATENT AND TRADEMARK OFFICE  
Washington, D.C. March 2005

Translated by: FLS, Inc.

PUBLICATION COUNTRY	(19):	JP
DOCUMENT NUMBER	(11):	2000-13697
DOCUMENT KIND	(12):	A
	(13):	
PUBLICATION DATE	(43):	2000-13697
<del>PUBLICATION DATE</del>	(45):	<del></del>
APPLICATION NUMBER	(21):	10-176211
APPLICATION DATE	(22):	19980623
ADDITION TO	(61):	
INTERNATIONAL CLASSIFICATION	(51):	H04N 5/44, 5/00, 5/445
DOMESTIC CLASSIFICATION	(52):	
PRIORITY COUNTRY	(33):	
PRIORITY DATE	(32):	
PRIORITY NUMBER	(31):	
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TITLE	(54):	TELEVISION PROGRAM RESERVATION DEVICE AND RECEIVER WITH PROGRAM RESERVING FUNCTION
FOREIGN TITLE	[54A]:	TEREBI BANGUMI YOYAKU SOCHI OYOB I BANGUMI YOYAKU KINO TSUKI JUSHIN SOCHI

[Claim 1] A television program reservation device in a system for reserving television programs using television program schedule information multiplexed with transmitted television signals, wherein the device comprises a data extracting means for extracting television program schedule data from a television program schedule data source containing television program schedule data generated based on television program schedule data multiplexed with transmitted television signals, a television program schedule storage means for storing the television program schedule data extracted by the data extraction means, a display processing means for generating and displaying a television program schedule based on the television program schedule data stored in the television program schedule storage means, a television program reservation means for reserving programs to be received using the television program schedule generated and displayed by the display processing means, and a transmission means for transmitting the reserved program data for the program to be received reserved by the television program reservation means to the receiver receiving the television program.

[Claim 2] The television program reservation device described in Claim 1, wherein the device comprises a portable phone device able to transmit and receive the different types of data, a data extracting means for extracting television program schedule data from a television program schedule data source containing television program schedule data, television program schedule storage means for storing

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\* Number in the margin indicates pagination in the foreign text.

the television program schedule data extracted by the data extraction means, a display processing means for generating and displaying a television program schedule based on the television program schedule data stored in the television program schedule storage means, a television program reservation means for reserving programs to be received using the television program schedule generated and displayed by the display processing means, and a transmission means for transmitting the reserved program data for the program to be received reserved by the television program reservation means to the receiver receiving the television program, wherein the television program schedule generated by the display processing means displays at least the name and phone number of the portable phone device on the display, and wherein the reserving of television programs using the television program reserving means is performed by a portable phone function using keys on a portable phone device.

[Claim 3] The television program reservation device described in Claim 1 or Claim 2, wherein the device has a reserved program audio signal generating device for extracting program reservation data containing at least the broadcast channel, broadcast date, broadcast start time and program name and converting the extracted program reservation data to audio signals when a reserved program is selected by the program reserving means based on the television program table generated by the display processing means, and wherein the program reservation data generated by the reservation program audio signal

generating means is outputted as audio when a reserved program is selected using the program reserving means.

[Claim 4] A receiving device with a program reserving function in a system for reserving television programs using television program schedule information multiplexed with transmitted television signals, wherein the device comprises a reserved program data receiving means for receiving the reserved program data transmitted from the transmitting means of the television program reservation device, a reserved television program data storage device for storing reserved program data received by the reserved program data receiving means, a reserved program control means for generating control signals for comparing the current time to the start time for the reserved program data stored in the reserved television program data storage means, starting reserved program reception when the current time reaches the start time for the reserved program, and stopping the reception of the reserved program when the end time of the reserved program is reached, and wherein a predetermined reserved television program is received from a plurality of television signals based on control signals from the reserved television program control means.

[Claim 5] The receiving device with a program reserving function described in Claim 4, wherein the device comprises a reserved program data receiving means for receiving the reserved program data transmitted from the transmitting means of the television program reservation device, a reserved television program

data storage device for storing reserved program data received by the reserved program data receiving means, and a reserved television program recognizing means for generating display signals to display the reserved program and audio signals for generating audio signals for displaying the reserved program with sound based on the reserved television program data stored in the reserved television program data storage means, and wherein the reserved program is displayed on the display and audio signals are generated for the reserved program using the display signals generated by the reserved television program recognizing means.

[Detailed Description of the Invention]

[0001] [Industrial Field of Application]

The present invention relates to a television program reservation device and a receiver with a television program reserving function able to reserve a television program from a location remote from a receiver for receiving television signals in a system for reserving television programs using television program schedule information multiplexed with transmitted television signals.

[0002] [Prior Art]

When a person wishes to schedule the recording of broadcast television programs using a video tape recorder (VTR), he or she first reviews the broadcast schedule in a newspaper or magazine and then uses the keys on the VTR to input the broadcast channel, broadcast date and time, and G code for each program he or she wishes to record. The broadcast channel, broadcast date and time, and G

code for each program he or she wishes to record have to be inputted into the VTR either using the keys on the VTR or on the remote control transmitter (referred to as the remote control below) belonging to the VTR. The recording process cannot be scheduled from a remote site not visible from the VTR.

[0003] For this reason, a method has been developed in which a VTR is connected to a phone line and recording reservations made /3 via the phone line. However, even when making recording reservations via the phone line, the user still has to hold a printed program schedule and input the broadcast channels, dates and times and G codes for the desired programs. The recording reservations data input is complicated because the broadcast channels, dates and times and G codes required for recording reservation have to be transmitted over a phone line.

[0004] The use of satellites means the number of television stations broadcasting programs now exceeds 100. For the convenience of users, electronic programming data (EPG data) is now multiplexed with television signals. A program schedule can now be displayed on a television screen based on transmitted EPG data. The user searches for program to watch in the program schedule displayed on the television screen and stores the EPG data for the programs to be watched. When the current time reaches the start time of a program to be watched, the program is received and played back.

[0005] Standards for transmitting EPG data using text broadcast signals multiplexed with television signals in terrestrial television

broadcasts and viewing, recording and playing back programs based on EPG data have just been established in Europe. In July 1993, the Japanese Broadcast Technology Development Council established the "Television Program Recording Reservation System For Text Broadcasts".

[0006] The configuration and operation of a receiver for reserving broadcast programs using EPG data will now be explained using FIG 4.

[0007] FIG 4 (a) is a block diagram showing the circuit configuration of a receiver with a program reservation function for receiving and demodulating EPG data and reserving programs. In the figure, 41 denotes the television tuner, 42 denotes the television audio/video signal processing circuit, 43 denotes the EPG decoder, 44 denotes the output terminal, 45 denotes the program schedule information memory, 46 denotes the reservation program information memory, 47 denotes the program reservation processing means, 48 denotes the reserved program control means, 49 denotes the remote control signal receiver, 50 denotes the microcomputer (CPU), 51 denotes the remote control transmitter, 52 denotes the program schedule display means, and 53 denotes the program schedule output terminal.

[0008] Television signals received by the antenna and broadcast channel selection signals inputted from the remote control transmitter [51] by the user are received by the remote control signal receiver [49], the inputted broadcast channel selection



signals are interpreted, the tuning frequency corresponding to the broadcast channel is generated, the television tuner [41] is controlled based on the control of the CPU [50], and the desired channel is selected. The television signals selected by the television tuner [41] are converted to an intermediate frequency and supplied to the television audio/video signal processing circuit [41] and the EPG decoder [43]. The television audio/video signal processing circuit [41] extracts the video signals and audio signals from the television signals, demodulates the signals from the output terminal [44], displays the video signals on the display screen of a cathode ray tube, and outputs the audio signals from the speakers.

[0009] The EPG decoder [43] separates the EPG data multiplexed with the television signals and demodulates the EPG data based on the CPU [50] control. The demodulated EPG data is stored in the program schedule information memory [45]. When television schedule display is inputted from the remote control transmitter [51], the remote control signal receiver [49] sends the television schedule display input to the CPU [50], the program reservation mode stored in the program reservation means [47] is read based on the CPU [50] control, the EPG data stored in the program schedule information memory [45] is read according to the program reservation mode, the desired program schedule format is edited by the program schedule display means [52] and converted to video signals for the program schedule, the signals are supplied to the television screen from the program display output terminal [53], and the schedule is displayed.

[0010] An example of a program schedule displayed on a television screen is shown in FIG 4 (b). The first line displays the broadcast channel name, the channel number and the broadcasting date. The second line and so on display the program names in the order of broadcast, and a cursor is used to select programs.

[0011] Next, in order to reserve programs from the program schedule displayed on the television screen, the cursor displayed over the program schedule is moved using the up and down keys for the remote control transmitter [51]. The cursor over the program schedule is then moved according to the operation of the up and down keys by the remote control signal processor [49] based on CPU [50] control. When the location of the program the user wants to reserve is reached, the program reservation selection key for the remote control transmitter [51] is pressed, and the EPG data for the reserved program is stored in the reserved program information memory [46].

[0012] In this way, a user can reserve desired programs from EPG data for many days of television program data including the current broadcast day that is multiplexed with the television signals, and to instantly store the EPG data for the reserved programs in the reserved program information memory [46].

[0013] The reserved program data stored in the reserved program information memory [46] and the reserved program control mode stored in the reserved program control means [48] are used to compare the current time to the start and end times of a reserved program and

operate the television signal receiver when a reserved program start or end time is reached. Channel selection control for the television tuner [41] is performed via the CPU [50].

[0014] When a user wishes to reserve a television program, he or she does not have to consult the television schedule in a newspaper or magazine. The user simply moves the cursor over the program schedule displayed on the television screen or scrolls down the program schedule to the desired program and presses a reserved program selection key to reserve the program. By installing a control function for starting and stopping the recording by the VTR in the reserved program control mode of the reserve program control means [48], VTR recording reservations are possible. /4

[0015] Unfortunately, television programs can be reserved using EPG information only while viewing a program schedule displayed on the television screen. In other words, television programs can be reserved using a remote control [51] only from a position where the television screen displaying the program schedule can be viewed.

[0016] [Problem to be Solved by the Invention]

Reservation of television programs is performed by inputting the broadcast channels, dates and times and G codes of the desired programs directly into the receiver while looking at the program schedule in a newspaper or magazine or by selecting the desired television programs from a program schedule displayed on a television screen from television program schedule information multiplexed in television signals. In both cases, the user has to be in front of

the receiver receiving the television signals when television programs are reserved. Television programs cannot be reserved from a location where the receiver is not directly visible.

[0017] Television programs can be reserved from a remote location using phone lines. But even where a phone line can be used, the user wishing to reserve a television program still must have the correct broadcast channel, data and time and G code for every television program he or she wishes to reserve. The huge amount of data that has to be entered also makes this television program reservation method too complicated.

[0018] The purpose of the present invention is to provide a television program reservation device and receiver with a television program reserving function that allows the user to confirm many days of television program data including the current broadcast day, and to allow for selection of reserved programs from the television program schedule information and for program reservation for a receiver from a remote site where the receiver to receive the television signals is not directly visible.

[0019] [Means of Solving the Problem]

The present invention is a television program reservation device in a system for reserving television programs using television program schedule information multiplexed with transmitted television signals, wherein the device comprises a data extracting means for extracting television program schedule data from a television program schedule data source containing television program schedule data

generated based on television program schedule data multiplexed with transmitted television signals, a television program schedule storage means for storing the television program schedule data extracted by the data extraction means, a display processing means for generating and displaying a television program schedule based on the television program schedule data stored in the television program schedule storage means, a television program reservation means for reserving programs to be received using the television program schedule generated and displayed by the display processing means, and a transmission means for transmitting the reserved program data for the program to be received reserved by the television program reservation means to the receiver receiving the television program.

[0020] It is also a television program reservation device, wherein the device comprises a portable phone device able to transmit and receive the different types of data, a data extracting means for extracting television program schedule data from a television program schedule data source containing television program schedule data, television program schedule storage means for storing the television program schedule data extracted by the data extraction means, a display processing means for generating and displaying a television program schedule based on the television program schedule data stored in the television program schedule storage means, a television program reservation means for reserving programs to be received using the television program schedule generated and displayed by the display processing means, and a transmission means for transmitting

the reserved program data for the program to be received reserved by the television program reservation means to the receiver receiving the television program, wherein the television program schedule generated by the display processing means displays at least the name and phone number of the portable phone device on the display, and wherein the reserving of television programs using the television program reserving means is performed by a portable phone function using keys on a portable phone device.

[0021] It is also a television program reservation device, wherein the device has a reserved program audio signal generating device for extracting program reservation data containing at least the broadcast channel, broadcast date, broadcast start time and program name and converting the extracted program reservation data to audio signals when a reserved program is selected by the program reserving means based on the television program table generated by the display processing means, and wherein the program reservation data generated by the reservation program audio signal generating means is outputted as audio when a reserved program is selected using the program reserving means.

[0022] It is also a receiving device with a program reserving function in a system for reserving television programs using television program schedule information multiplexed with transmitted television signals, wherein the device comprises a reserved program data receiving means for receiving the reserved program data transmitted from the transmitting means of the television program

reservation device, a reserved television program data storage device for storing reserved program data received by the reserved program data receiving means, a reserved program control means for generating control signals for comparing the current time to the start time for the reserved program data stored in the reserved television program data storage means, starting reserved program reception when the current time reaches the start time for the reserved program, and stopping the reception of the reserved program when the end time of the reserved program is reached, and wherein a predetermined reserved television program is received from a plurality of television signals based on control signals from the reserved television program control means.

[0023] It is also a receiving device with a program reserving function, wherein the device comprises a comprises a reserved program data receiving means for receiving the reserved program data transmitted from the transmitting means of the television program reservation device, a reserved television program data storage device for storing reserved program data received by the reserved program data receiving means, and a reserved television program recognizing means for generating display signals to display the reserved program and audio signals for generating audio signals for displaying the reserved program with sound based on the reserved television program data stored in the reserved television program data storage means, and wherein the reserved program is displayed on the display and audio signals are generated for the reserved program using the /5

display signals generated by the reserved television program recognizing means.

[0024] [Embodiment of the Invention]

The following is a detailed explanation of an embodiment of the present invention with reference to the drawings. FIG 1 is a block diagram showing the circuit configuration for the television program reservation device and the receiver with a television program reserving function in an embodiment of the present invention.

[0025] In this figure, 10 denotes a receiver with a television program reserving function and 30 denotes a television program reservation device.

[0026] In the receiver with a television program reserving function [10], 11 denotes the television tuner, 12 denotes the television audio/video circuit, 13 denotes the EPG decoder, 14 denotes the television schedule information memory, 15 denotes the preserved program information memory, 16 denotes the program reserving means, 17 denotes the reserved program control means, 18 denotes the program schedule display means, 19 denotes the transmitter, 20 denotes the receiver, 21 denotes the microcomputer (CPU), and 22 denotes the control keys. The television tuner [11] selects the desired channel from the television signals received by the antenna and converts them to an intermediate frequency. The television audio/video circuit [12] separates the audio signals and video signals from the intermediate frequency supplied by the television tuner [11]. The signals are processed, the video signals



are displayed on the display screen of a cathode ray tube, and the audio signals are outputted from the speakers. Alternatively, the desired audio signals and video signals are outputted to the magnetic head for recording.

[0027] The EPG decoder [13] separates and demodulates the EPG data multiplexed with the television signals selected by the television tuner [11]. The EPG data demodulated by the EPG decoder [13] is then stored in the program schedule information memory [14] based on CPU [50] control. The CPU [21] is connected to the control keys [22]. The user inputs controls for the receiver [10] using the control keys [22], and the CPU [21] controls the device and controls the operation of the processing means described below based on the input.

[0028] When there is program schedule display or program reservation input from the control keys [22], the CPU [21] reads the program reservation mode stored in the program reservation means [16], reads the program schedule information stored in the program schedule information memory [14], and supplies the information to the television program schedule display means [18]. The television program schedule display means [18] edits the program schedule to the desired program schedule format and converts it to video signals with a program selection cursor added, the signals are outputted to the television screen. The cursor over the program schedule is then moved according to the operation of the up and down keys among the control keys [22] via the CPU [21]. When the location of the program the

user wants to reserve is reached, the program reservation selection key in the control keys [22] is pressed. The reserved television program schedule information is then stored in the reserved program information memory [15].

[0029] The start and end times of the reserved television program information stored in the reserved program information memory [15] are compared to the actual time by the reserved program control means [17]. When the actual time reaches the start time of the reserved program, control signals are generated to get the television tuner [11] to select the channel on which the program is broadcast based on the reserved program information at that time. The various television signal processing circuits in the receiver [10] are operated and the reserved program is displayed on the screen or recorded. When the end time of the reserved program is reached, the operation of the various television signal processing circuits in the receiver [10] are stopped.

[0030] The transmitter [19] and receiver unit [20] exchange various types of data with the television program reservation device [30] described below using wireless or infrared transmissions. The transmitter [19] has a function to transmit television program schedule information stored in the program schedule information memory [14] to the television program reservation device [30], and the receiver unit [20] has a function to receive operating modes and data signals from the television program reservation device [30].

[0031] In the television program reservation device [30], 31 denotes the receiver, 32 denotes the transmitter, 33 denotes the switch, 34 denotes the program schedule information memory, 35 denotes the reserved program information memory, 36 denotes the program schedule display means, 37 denotes the display, 38 denotes the program reserving means, 39 denotes the CPU, and 40 denotes the control keys. In the television program reservation device [30], the receiver [31], the transmitter [32], the program schedule information memory [34], the reserved program information memory [35], the program schedule display means [36], the program reserving means [38], the CPU [39] and the control keys [41] perform the same operations as the television schedule information memory [14], preserved program information memory [15], program reserving means [16], CPU [20], control keys [21], transmitter [19] and receiver unit [20] in the receiver [10]. The switch [30] is used to switch between the receiver [31] and the transmitter [32].

[0032] The television program reservation device [30] is also the remote control terminal for the receiver [10]. An outside view of this device is shown in FIG 2.

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[0033] The outside view of the television program reservation device [30] consists mainly of a display [37] and control keys [40]. The display [37] is a liquid crystal display screen. The control keys [40] include a power key [41] for turning the power to the receiver [10] on and off, a ten key pad [42] to select the broadcast channel, up and down keys [43] for moving up and down among channels, an audio

sub channel key [44] for switching between the main and sub audio channels, an audio quality key [45] for switching audio quality, up and down keys for adjusting the volume [46], a program schedule display key [47] for program display and program reservation mode, a program reservation key [48] for reserving a program, and scroll keys [49] for scrolling up, down, left and right over the screen displayed on the display [37].

[0034] Operation of the television program reservation device [30] will now be explained with reference to FIG 2.

[0035] When the power key [41] in the control keys [40] is pressed, the CPU [39] in response to the pressing of the power key [41] switches the switch [33] to the transmitter [32], and power operation signals are generated and sent from the transmitter [32] to the receiver unit [20] in the receiver [10]. Power to the receiver [10] (not shown) is turned on and off by the CPU [21] based on the power operation signals sent to the receiver unit [20] in the receiver [10]. When the ten keys [42] or channel up and down keys [43] in the control keys [40] are pressed, channel selection signals are sent from the television program reservation device [30] to the receiver [10] in the same manner as the operation of the power key [41], and channel tuning signals are generated and supplied to the television tuner [11]. Similar operations are performed when the audio sub channel key [44], audio quality key [45] and volume keys [46] are pressed.

[0036] When the program schedule key [47] is pressed in the program reservation operation, command signals for the television program schedule information are generated by the CPU [39] and are sent to the receiver unit [20] via the switch [33] and transmitter [32]. In response to the television program schedule command signals received by the receiver unit [20] in the receiver [10], the CPU [21] in the receiver [10] reads the television program schedule information stored in the program schedule information memory [14] and sends the information to the television program schedule reservation device [30] via the transmitter [19]. The television program schedule information sent from the receiver [10] is received by the receiver [31] in the television program schedule reservation device [30] and stored in the program schedule information memory [34] via the switch [33]. It is edited to the desired format by the television program schedule display means [36] and the television program schedule is displayed on the display [37]. As shown in the display [37] in FIG 2, the display [37] displays broadcaster names, channel names, broadcast dates, start and end times and program names with a cursor [37'] displayed over them.

[0037] The cursor [37'] displayed on the display [37] is moved using the channel up and down keys [43] to select the desired channel from among those displayed. When there is a program with a date not displayed on the display [37] or a program on a different channel, the up, down, left and right scroll keys [49] are used to change the display of the program schedule. When the cursor is moved to the

desired program and the program reservation key [48] is pressed, the CPU [39] detects the position of the cursor [37'], extracts the television program schedule information for the program displayed at that position, and stores the information in the reserved program information memory [35]. The television program schedule information for the reserved program is then sent to the receiver [10] from the transmitter [32] via the switch [33] and stored in the reserved program information memory [16] for the receiver [10].

[0038] In other words, the television program schedule information multiplexed with the television signals is separated by the receiver [10], the separated television program schedule data is sent to the television program reservation device [30] from the receiver [10], the program schedule is displayed on the display [37] in the television program reservation device [30], programs are reserved using the displayed television program schedule, and the reserved television program information is sent from the television program reservation device [30] to the receiver [10] where the program is reserved.

[0039] As a result, program reservations can be performed based on the program schedule displayed on the hand-held television program reservation device [30] and not the program schedule displayed on the television screen on the receiver [10]. By setting the receiving units [19, 32] and the transmitting units [20, 31] in the receiver [10] and the television program reservation device [30] to exchange particular wireless frequency signals, program reservations can be

performed by the television program reservation device [30] at a remote location not in direct sight of the receiver [10]. Also, the latest program schedule information can be sent to the television program reservation device [30] from the receiver [10] for program reservation, and program reservations can be performed by the handheld television program reservation device based on the most recent program schedule information sent.

[0040] The following is an explanation of another embodiment of the present invention with reference to FIG 3. In this embodiment, the television program reservation device has a portable phone function. The components identical to those in FIG 1 are denoted by the same numbers and a detailed explanation of these components has been omitted.

[0041] The phone line modem [25] in the receiver [10] converts television program schedule information sent and received via phone lines to phone line signals. The transceiver module [45] in the television program reservation device [30] converts the audio signals and television program schedule information sent and received over phone lines into phone line signals. The demodulate/separate circuit [46] demodulates and separates the audio signals and television program schedule information sent and received over phone lines. The audio signal processing circuit [47] amplifies the audio signals separated by the demodulate/separate circuit [46], outputs them to the speaker [48], amplifies the audio signals inputted from the microphone [49], converts them to phone line signals via the

demodulate/separate circuit [46] and the transceiver module [45] and sends them over the phone lines. The phone memory [50] stores various phone functions such as phone numbers and call records. The phone processing means [51] houses the processing routines for the various phone functions when calls are placed and received. The phone number/program display means [52] displays various graphics on the display [37] with incoming and outgoing phone numbers during call functions. When television programs are reserved, the display generating means is switched to display the television program schedule.

[0042] In other words, when a television program is reserved using the television program reservation device [30], the phone mode key (not shown) in the control keys [40] is first pressed, and the receiver [10] is connected to the phone line via the demodulate/separate circuit [46] and the transmission module [45]. Next, using the program schedule key in the control keys [40], a transmission command signal for the television program schedule information is sent to the receiver [10], and the program schedule information sent from the receiver [10] is stored in the program /7 schedule information memory [34]. Next, as in the operation of FIG 1, the program schedule is displayed on the display [37], a program is reserved, and the reserved program schedule information is sent to the reserved program information memory [15].

[0043] As a result, in order to receive the television program schedule data and reserved program data using a phone line when the



receiver [10] and the television program reservation device [30] are at remote locations with respect to each other, the user obtains and displays the latest television program schedule data on the hand-held television program reservation device [30] if necessary, and the program schedule data for the reserved program selected at this time is sent to the receiver [10] and the program reservation is executed.

[0044] In the explanation of the embodiment of the present invention, the television program schedule information was multiplexed with television signals and isolated and decoded by a receiver [10]. However, television program schedule information can be recorded on an IC card, and the IC card can be inserted into the television program reservation device [30] to serve as the television program schedule information memory.

[0045] Also, the television program reservation device [30] with portable phone function shown in FIG 3 can use the audio processing circuit [47] to output broadcast channel, broadcast start and end times, and program name information for reserved programs, convert them to audio signals and output them to the speaker [48] for the user to get confirmation messages in audio for reserved programs when the reserved television program data is stored in the reserved television program data memory [35] after selection using the program reserving means [38]. An audio generation function can also be added to the embodiment in FIG 1 to allow the user to get confirmation messages in audio for reserved programs.

[0046] Furthermore, when a function is added to read the reserved program schedule information stored in the reserved program information memory [15] in the receiver [10] and sent to the television program reservation device [30], and a function is added to the television program reservation device [30] to read the reserved program information stored in the reserved program information memory [15] in the receiver [10], reserved program information stored in the receiver [10] can be displayed on the display [37] of the television program reservation device [30]. This can also be announced with sound using the audio function.

[0047] [Effect of the Invention]

The present invention allows the latest television program schedule information to be displayed on a hand-held television program reservation device when the receiver for receiving television signals is either not in direct sight or too far away. This television program reservation device is also able to reserve programs based on the latest television program schedule information and send the reserved program information to the receiver so that the desired television program can be reserved normally.

[Brief Explanation of the Drawings]

[FIG 1] A block diagram showing the circuit configuration for the television program reservation device and the receiver with a television program reserving function in an embodiment of the present invention.

[FIG 2] A plane view showing the outside of the television program reservation device in the present invention.

[FIG 3] A block diagram of the circuit configuration in another embodiment of the present invention.

[FIG 4] A television program reservation system of the prior art. FIG 4 (a) is a block diagram showing the circuit configuration for a receiver with a television program reserving function, and FIG 4 (b) is a program schedule displayed on the television screen.

[Key to the Drawings]

10 ... receiver with program reservation function, 11 ... television tuner, 12 ... television audio/video circuit, 13 ... EPG decoder, 14 ... television schedule information memory, 15 ... preserved program information memory, 16 ... program reserving means, 17 ... reserved program control means, 18 ... program schedule display means, 19 ... transmitter, 20 ... receiver, 21 ... microcomputer, 22 ... control keys, 30 ... television program reservation device, 31 ... receiver, 32 ... transmitter, 33 ... switch, 34 ... program schedule information memory, 35 ... reserved program information memory, 36 ... program schedule display means, 37 ... display, 38 ... program reserving means, 39 ... microcomputer, 40 ... control keys

[Figure 1]

[Figure 2]

[FIG 1]

11 ... television tuner, 12 ... television audio/video circuit, 13 ... EPG decoder, 14 ... television schedule information memory, 15 ... preserved program information memory, 16 ... program reserving means  
 17 ... reserved program control means, 18 ... program schedule display means, 19 ... transmitter, 20 ... receiver, 21 ... CPU, 22 ... control keys, 31 ... receiver, 32 ... transmitter, 33 ... SW, 34 ... program schedule information memory, 35 ... reserved program information memory, 36 ... program schedule display means, 37 ... display, 38 ... program reserving means, 39 ... CPU, 40 ... control keys

[FIG 2]

37 ...      00 Television    MM/DD (Sat)  
              18:00-19:00    Evening News  
              19:00-21:00    Pro Baseball

41 ... power, 43 ... channel, 44 ... audio sub channels, 45 ... audio quality, 46 ... volume (up/down), 47 ... program schedule, 48 ... program reservation, 49 ... scroll (up/down/left/right)

[Figure 3]

[Figure 4]

[FIG 3]

11 ... television tuner, 12 ... television audio/video circuit, 13 ... EPG decoder, 14 ... television schedule information memory, 15 ... preserved program information memory, 16 ... program reserving means, 17 ... reserved program control means, 18 ... program schedule display means, 21 ... CPU, 22 ... control keys, 25 ... phone line modem (phone line), 34 ... program schedule information memory, 35 ... reserved program information memory, 36 ... program schedule display means, 37 ... display, 38 ... program reserving means, 39 ... CPU, 40 ... control keys, 45 ... transceiver module, 46 ... demodulate/separate circuit, 47 ... audio signal processing circuit, 48 ... speaker, 49 ... microphone, 50 ... phone memory, 51 ... phone processing means, 52 ... phone no. program schedule display means

[FIG 4]

41 ... television tuner  
42 ... TV audio/visual signal  
43 ... EPG decoder  
45 ... program schedule information memory  
46 ... reserved program information memory  
47 ... program reserving means  
48 ... reserved program control means  
49 ... remote control signal receiving means  
50 ... CPU  
51 ... remote control transmitter  
52 ... program schedule display means

00	Television	MM/DD
09:00-11:55	Morning Show	
11:55-12:00	Weather Report	
12:00-12:45	Evening News	
19:00-21:00	Pro Baseball	
21:00-23:00	Foreign Movie	
23:00-24:00	Midnight News	
24:00-	Music	

**MACHINE-ASSISTED TRANSLATION (MAT):****(19)【発行国】**

日本国特許庁 (JP)

**(19)[ISSUING COUNTRY]**

Japan Patent Office (JP)

**(12)【公報種別】**

公開特許公報 (A)

**(12)[GAZETTE CATEGORY]**

Laid-open Kokai Patent (A)

**(11)【公開番号】**

特開 2000-13707(P2000-13707A)

**(11)[KOKAI NUMBER]**Unexamined Japanese Patent  
2000-13707(P2000-13707A)**(43)【公開日】**

平成12年1月14日 (2000. 1. 14)

**(43)[DATE OF FIRST PUBLICATION]**

January 14, Heisei 12 (2000. 1.14)

**(54)【発明の名称】**

携帯型番組表示装置及び携帯型番組表示方法

**(54)[TITLE OF THE INVENTION]**

Portable programme display device and portable programme display method

**(51)【国際特許分類第7版】**

H04N 5/445

G09G 5/34

H04N 5/44

**(51)[IPC INT. CL. 7]**

H04N 5/445

G09G 5/34

H04N 5/44

// H04N 7/08

7/081

// H04N 7/08

7/081

**【FI】**

H04N 5/445

Z

G09G 5/34

A

H04N 5/44

D

7/08

Z

**【FI】**

H04N 5/445

Z

G09G 5/34

A

H04N 5/44

D

7/08

Z

**【審査請求】** 未請求**[REQUEST FOR EXAMINATION]** No

【請求項の数】 9

[NUMBER OF CLAIMS] 9

【出願形態】 OL

[FORM OF APPLICATION] Electronic

【全頁数】 9

[NUMBER OF PAGES] 9

(21)【出願番号】

特願平 10-176212

(21)[APPLICATION NUMBER]

Japanese Patent Application Heisei  
10-176212

(22)【出願日】

平成10年6月23日 (1998. 6. 23)

(22)[DATE OF FILING]

June 23, Heisei 10 (1998. 6.23)

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000003078

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**【テーマコード(参考)】**

5C025

5C063

5C082

**(74)[AGENT]****[ID CODE]**

100076233

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**[THEME CODE (REFERENCE)]**

5C025

5C063

5C082

**【Fターム(参考)】**5C025 AA23 BA25 BA27 CA09  
CB08 CB09 DA055C063 AB05 AC10 DA07 DB02  
EB29 EB32 EB335C082 AA02 AA21 BA02 BB01  
CA72 MM05 MM09**[F TERM (REFERENCE)]**5C025 AA23 BA25 BA27 CA09 CB08 CB09  
DA055C063 AB05 AC10 DA07 DB02 EB29 EB32  
EB335C082 AA02 AA21 BA02 BB01 CA72 MM05  
MM09

**(57)【要約】**

(修正有)

**(57)[ABSTRACT OF THE DISCLOSURE]**

(Amendments Included)

**【課題】**

従来のチャンネル選局操作及び番組予約は複雑で、リモコン制御信号の赤外線信号の届く範囲でリモコンと受信機を相対向して操作する必要があった。

**[SUBJECT OF THE INVENTION]**

Conventional channel selection operation and programme reservation are complicated, the remote control and the receiver needed to be mutually opposed and operated by the trajectory of the infrared signal of a remote-control control signal.

**【解決手段】**

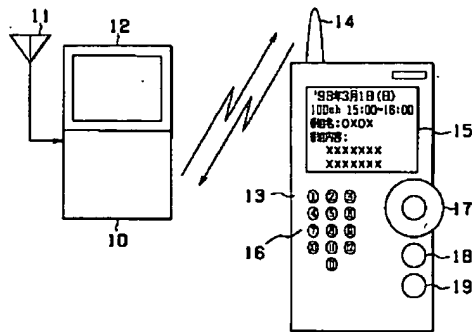
テレビジョン信号に多重伝送されるテレビ番組表情報を分離復調した情報を基に生成されたテレビ番組表データ源からのデータを取り込み記憶する記憶手段と、記憶されたテレビ番組表データを基に、放送チャンネルと放送時間を基準とした番組表を再生表示する表示手段に再生表示された番組表を放送チャンネルと放送時間を基準としてスクロールさせるスクロール手段と、表示手段に再生表示された番組表から予約番組を設定すると共に、予約番組データをテレビジョン信号受信機器に伝送する番組予約設定手段とを具備し、番組予約設定手段で設定した予約番組のテレビ番組データを用いて、テレビジョン信号受信機器が選局するテレビ番組を設定させる携帯型番組表示装置である。

**[PROBLEM TO BE SOLVED]**

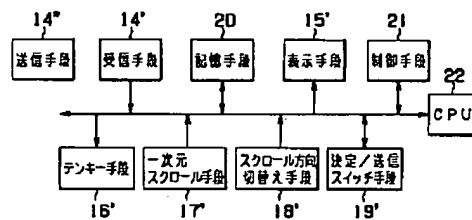
A memory means to take in and store the data from the television programme timetable data resources generated based on the information which carried out the isolation demodulation of the television programme timetable information by which a multiplex transmission is carried out to a television signal, based on the stored television programme timetable data, a scroll means to make the display means which carries out the playback display of the programme timetable which made a broadcast channel and broadcasting hours standard scroll a broadcast channel and broadcasting hours for the programme timetable by which the playback display was carried out as standard, while setting a reservation programme as a display means from the programme timetable by which the playback display was carried out, a programme reservation setting means to transmit reservation programme data to a television signal receiver device is comprised, it is the portable programme display device to which the TV program which a television

signal receiver device selects is set using the TV program data of the reservation programme set by the programme reservation setting means.

15	Sun., March 1, 1998
	Programme name : OXOX
	Content of programme: XXXX



(a)



(b)

14'' Transmitting means	14' Receiving means	20 Memory means	15' Display means	21 Control means
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16' Key-pad means	17' One-dimensional scroll means	18' Scroll direction switching means	19' Determination/transmission switch means
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**【特許請求の範囲】****[CLAIMS]****【請求項1】**

テレビジョン信号に多重伝送されるテレビ番組表情報と、このテレビ番組表情報を用いて受信するテレビ番組を予約する番組予約システムにおいて、  
前記テレビジョン信号に多重伝送されるテレビ番組表情報を分離復調し、この分離復調したテレビ番組表情報を基に生成されたテレビ番組表データを有するテレビ番組表データ源から前記テレビ番組表データを取り込み記憶する記憶手段と、  
前記記憶手段に記憶されたテレビ番組表データを基に、放送チャンネルと放送時間を基準とした番組表を再生表示する表示手段と、  
前記表示手段に再生表示された番組表を放送チャンネルと放送時間を基準としてスクロールさせるスクロール手段と、

**[CLAIM 1]**

A portable programme display device, in which in the programme reservation system which reserves the TV program which receives using the television programme timetable information by which a multiplex transmission is carried out to a television signal,  
and this television programme timetable information, the isolation demodulation of the television programme timetable information by which a multiplex transmission is carried out to said television signal is carried out,  
a memory means to take in and store said television programme timetable data from the television programme timetable data resources which have the television programme timetable data generated based on this television programme timetable information that carried out the isolation demodulation, based on the television programme timetable data stored in said memory means,  
the display means which carries out the playback display of the programme timetable which made a broadcast channel and broadcasting hours standard, a scroll means to make said display means scroll a broadcast channel and broadcasting hours for the programme timetable by which the playback display was carried out as standard,

前記表示手段に再生表示された番組表から予約番組を設定すると共に、予約番組データをテレビジョン信号受信機器に伝送する番組予約設定手段とを具備し、前記番組予約設定手段で設定した予約番組のテレビ番組データを用いて、テレビジョン信号受信機器が選局するテレビ番組を設定させることを特徴とする携帯型番組表示装置。

**【請求項2】**

テレビジョン信号に多重伝送されるテレビ番組表情報と、このテレビ番組表情報を用いて受信するテレビ番組を予約する番組予約システムにおいて、前記テレビジョン信号に多重伝送されるテレビ番組表情報を分離復調し、この分離復調したテレビ番組表情報を基に生成されたテレビ番組表データを有するテレビ番組表データ源から前記テレビ番組表データを取り込み記憶する記憶手段と、前記記憶手段に記憶されたテレビ番組表データを基に、放送チャンネルと放送時間を基準とした番組表を再生表示する表示手段と、前記表示手段に再生表示された番組表を放送チャンネルと放送時間を基準としてスクロールさせるスクロール手段と、

While setting a reservation programme as said display means from the programme timetable by which the playback display was carried out, a programme reservation setting means to transmit reservation programme data to a television signal receiver device is comprised,

the TV program which a television signal receiver device selects is set using the TV program data of the reservation programme set by said programme reservation setting means.

**[CLAIM 2]**

A portable programme display method, in which television programme timetable information by which a multiplex transmission is carried out to a television signal, in the programme reservation system which reserves the TV program which receives using this television programme timetable information,

the isolation demodulation of the television programme timetable information by which a multiplex transmission is carried out to said television signal is carried out, a memory means to take in and store said television programme timetable data from the television programme timetable data resources which have the television programme timetable data generated based on this television programme timetable information that carried out the isolation demodulation, based on the television programme timetable data stored in said memory means,

the display means which carries out the

playback display of the programme timetable which made a broadcast channel and broadcasting hours standard, a scroll means to make said display means scroll a broadcast channel and broadcasting hours for the programme timetable by which the playback display was carried out as standard,

前記表示手段に再生表示された番組表から予約番組を設定すると共に、予約番組データをテレビ受信号受信機器に伝送する番組予約設定手段とを具備し、

前記記憶手段に記憶されたテレビ番組表データから生成された番組表を前記スクロール手段で放送チャンネルと放送時間を基準としてスクロール可能に前記表示手段に再生表示することを特徴とする携帯型番組表示方法。

While setting a reservation programme as said display means from the programme timetable by which the playback display was carried out, a programme reservation setting means to transmit reservation programme data to a television receiving number receiver device is comprised,

the playback display of the programme timetable generated from the television programme timetable data stored in said memory means is carried out at said display means so that a broadcast channel and broadcasting hours can be scrolled as standard by said scroll means.

### 【請求項3】

テレビジョン信号に多重伝送されるテレビ番組表情報と、このテレビ番組表情報を用いて受信するテレビ番組を予約する番組予約システムにおいて、

前記テレビ番組表情報を多重したテレビジョン信号を受信し番組選択する受信選択手段と、前記受信選択手段で受信選択したテレビジョン信号からテレビ番組表情報を分離復調し転送するテレビ番組表情報分離復調手段と、前記テレビジョン

### [CLAIM 3]

A programme timetable transmission and reception apparatus, in which in the programme reservation system which reserves the TV program which receives using the television programme timetable information by which a multiplex transmission is carried out to a television signal, and this television programme timetable information, the reception selection means which receives the television signal which multiplexed said television programme timetable information, and makes a programme selection, a

信号を基に番組映像と音声を再生・録画するテレビジョン信号処理手段と、前記テレビ番組表情情報を基に受信再生するテレビジョン番組を選択する選択番組データを記憶する予約番組データメモリ手段と、前記予約番組データメモリ手段に記憶されている予約選択番組データを基に前記受信選択手段とテレビジョン信号処理手段との動作を制御する予約番組制御手段とから成る受信機器と、

前記受信機器のテレビ番組表情情報分離復調手段からテレビ番組表情情報を受信し、このテレビ番組表情情報を基に番組表データを生成記憶する記憶手段と、前記記憶手段に記憶されたテレビ番組表データを基に、放送チャンネルと放送時間を基準とした番組表を再生表示する表示手段と、前記表示手段に再生表示された番組表を放送チャンネルまたは放送時間を基準としてスクロールさせるスクロール手段と、前記表示手段に再生表示された番組表から所望の番組を予約選択し、この予約選択した番組データを前記受信機器に伝送する番組予約設定手段とから成る携帯型番組表示機器とを具備し、

前記受信機で受信するテレビジョン信号の番組予約を前記携帯型番組表示機器を用いて行うことを特徴とする番組表送受信装置。

television programme timetable information separator demodulation means to carry out the isolation demodulation and to transmit television programme timetable information by said reception selection means from the television signal which made the reception selection, a television signal-processing means to playback and record programme video and audio based on said television signal, a reservation programme data-memory means to store the selected programme data which select the reception playback television programme based on said television programme timetable information, the receiver device which consists of a reservation programme control means to control operation of said reception selection means and a television signal-processing means based on the reservation selected programme data currently stored in said reservation programme data-memory means, television programme timetable information is received from the television programme timetable information separator demodulation means of said receiver device, the programme timetable data generation memory memory-means based on this television programme timetable information, based on the television programme timetable data stored in said memory means, the display means which carries out the playback display of the programme timetable which made a broadcast channel and broadcasting hours standard, a scroll means to make said display means scroll a broadcast channel or broadcasting hours for the programme



timetable by which the playback display was carried out as standard, the reservation selection of the requirement programme is made from the programme timetable by which the playback display was carried out at said display means, the portable programme display apparatus which consists of a programme reservation setting means to transmit this programme data that made the reservation selection to said receiver device is comprised,

programme reservation of a television signal which receives with said receiver is performed using said portable programme display apparatus.

**【請求項4】**

前記携帯型番組表示装置の表示手段に表示された番組表をスクロールするスクロール手段は、前記番組表のチャンネル軸、又は時間軸のいずれかの方向にスクロール移動させる一次元スクロール機能と、前記一次元スクロール機能によるスクロール移動方向を切り換えるスクロール切り替え機能とを具備し、前記表示手段に表示された番組表を前記一次元スクロール機能によるスクロール中において、前記スクロール切り替え機能によりスクロール軸を切り換えることを特徴とする請求項1記載の携帯型番組表示装置。

**[CLAIM 4]**

A portable programme display device of Claim 1, in which a scroll means to scroll the programme timetable displayed on the display means of said portable programme display device comprises the one dimensional scroll function which carries out a scroll movement, and the scroll switching function which switches the scroll moving direction by said one dimensional scroll function to the direction in any one of the channel axis of said programme timetable, or a time-axis, a scroll axis is switched by said scroll switching function during a scroll according the programme timetable displayed on said display means to said one dimensional scroll function.

**【請求項5】**

前記携帯型番組表示装置の表示手段に表示された番組表をスクロールするスクロール手段は、前記番組表のチャンネル番号を入力するテンキー機能と、前記番組表のチャンネル軸と時間軸のいずれの方向にもスクロール移動させる第1のスクロール機能と、前記番組表のチャンネル軸と時間軸の予め設定した間隔でスクロール移動させる第2のスクロール機能とを具備し、前記第2のスクロール機能进行操作した後、前記テンキー機能进行操作すると、所定のチャンネルの番組表にスクロールすることを特徴とする請求項1記載の携帯型番組表示装置。

**[CLAIM 5]**

A portable programme display device of Claim 1, in which a scroll means to scroll the programme timetable displayed on the display means of said portable programme display device comprises the key-pad function to input the channel number of said programme timetable, the 1st scroll function in which any direction of the channel axis of said programme timetable and a time-axis is made to carry out a scroll movement, and the 2nd scroll function which carries out a scroll movement by the predetermined interval of the channel axis of said programme timetable, and a time-axis, after operating said 2nd scroll function, when said key-pad function is operated, it will scroll to the programme timetable of a predetermined channel.

**【請求項6】**

前記第2のスクロール機能を連続して操作した際には、前記表示手段に表示されている番組表の時間軸方向に所定間隔でスクロールさせることを特徴とする請求項5記載の携帯型番組表示装置。

**[CLAIM 6]**

A portable programme display device of Claim 5, in which when said 2nd scroll function is operated continuously, the time-axis direction of the programme timetable currently displayed on said display means is scrolled by a predetermined interval.

**【請求項7】**

前記スクロール手段で前記表示手段に表示された番組表をスクロール時に、前記表示手段表示される番組表が端部に達しても継続して前記スクロール手段からスクロール操作がなされた際に、現在スクロー

**[CLAIM 7]**

A portable programme display device of Claim 1, in which even if said programme timetable by which a display means display is carried out arrives at an edge part, when scroll operation is continuously comprised from said scroll means at the time of a scroll,

ルされているスクロール軸の対辺上の番組表へとスクロール表示移行させることを特徴とする請求項1記載の携帯型番組表示装置。

the scroll display transfer of the programme timetable displayed on said display means by said scroll means is carried out to the programme timetable on the opposite side of the scroll axis scrolled now.

**【請求項8】**

前記表示手段に表示されている番組表を前記スクロール手段の第1のスクロール機能を用いて、チャンネル軸と時間軸のいずれの方向にも順次スクロールさせることを特徴とする請求項5記載の携帯型番組表示装置。

**[CLAIM 8]**

A portable programme display device of Claim 5, in which the any direction of a channel axis and a time-axis is also made to scroll in order the programme timetable currently displayed on said display means using the 1st scroll function of said scroll means.

**【請求項9】**

前記テレビジョン信号に多重されたテレビ番組表情報を基に生成されたテレビ番組表データを記憶する半導体記憶媒体と、  
前記半導体記憶媒体を前記携帯型番組表示装置の記憶手段に取り込みテレビ番組表データ源は、前記テレビジョン信号に多重されたテレビ番組表情報を基に生成されたテレビ番組表データを記憶する半導体記憶媒体とし、前記番組予約設定手段で番組予約設定したテレビ番組データと前記半導体記憶媒体に記憶すると共に、前記半導体記憶媒体を前記番組表示装置及び前記受信機器に着脱可能としたことを特徴とする請求項1乃至3記載の番組表示装置、番組表示方法又は番組表送受信装置。

**[CLAIM 9]**

A programme display device, the programme display method, or programme timetable transmission and reception apparatus of Claim 1 to 3, in which the semiconductor storage medium which stores the television programme timetable data generated based on the television programme timetable information multiplexed by said television signal, a said semiconductor storage medium is taken in for the memory means of said portable programme display device, and let television programme timetable data resources be the semiconductor storage medium which stores the television programme timetable data generated based on the television programme timetable information multiplexed by said television signal, while storing in the TV program data which carried out the programme reservation

setting by said programme reservation setting means, and said semiconductor storage medium, it enabled it to attach or detach said semiconductor storage medium to said programme display device and said receiver device.

**【発明の詳細な説明】****[DETAILED DESCRIPTION OF THE INVENTION]****【0001】****[0001]****【発明の属する技術分野】**

本発明は、テレジョン信号に多重伝送されるテレビ番組表情報を受信し、このテレビ番組表情報を基に視聴又は録画する番組を予約する番組予約システムにおいて、特にテレビ番組表メニューを表示し、その表示された番組表から番組予約できる携帯型番組表示装置に関する。

**[TECHNICAL FIELD OF THE INVENTION]**

This invention receives the television programme timetable information by which a multiplex transmission is carried out to a television signal, in the programme reservation system which reserves the programme viewed, listened to which or recorded based on this television programme timetable information, in particular a television programme timetable menu is displayed, it relates to the portable programme display device which makes programme reservation from the displayed programme timetable.

**【0002】****[0002]****【従来の技術】**

近年、衛星を用いた100チャンネル以上のテレビ放送が実用化され、この多チャンネルテレビ放送では、番組の視聴選択の利便性向上を目的とし、テレビ信号にテレビ番組表情報(以下、EPGデータという)を多重伝送し、そのEPGデータを基に再

**[PRIOR ART]**

In recent years, television broadcasting of 100 or more channels using a satellite is utilized, it aims at the convenient improvement of the viewing and listening selection of a programme in this multi-channel television broadcasting, the multiplex transmission of the television

生表示されたテレビ番組表から視聴する番組を選択すると共に、視聴番組の予約も可能としている。

programme timetable information (henceforth EPG data) is carried out to a TV signal, while selecting the programme to which it views and listens from the playback display television programme timetable based on the EPG data, it can be made to make reservation of a viewing and listening programme.

**[0003]**

また、地上波テレビ放送においてもテレビ信号に多重伝送される文字放送信号にEPGデータを搭載する方式が規格制定され、日本においては、1993年7月に放送技術開発協議会において「文字放送によるテレビジョン番組録画予約システムの規格」が制定された。

**[0003]**

Moreover, specification establishment of the system which mounts EPG data on the teletext signal by which a multiplex transmission is carried out to a TV signal also in terrestrial TV broadcasting is carried out, in Japan, "Specification of the television programme video-recording reservation system by teletext" was enacted in the broadcast technological development conference in July, 1993.

**[0004]**

このEPGデータを用いて番組予約する受信機の構成と動作について、図5を用いて説明する。

**[0004]**

The structure and operation of a receiver which make programme reservation using this EPG data are demonstrated using FIG. 5.

**[0005]**

図5(a)は、EPGデータを基にテレビ受信機の画面に再生表示されたテレビ番組メニューを示す番組図で、テレビ受信機50は伝送されたテレビ信号に多重されているEPGデータを分離復調し、その復調されたEPGデータを記憶すると共に、テレビ画面に、放送日付51、放送時間帯52、放送チャンネル番号53、及

**[0005]**

FIG.5(a) is the programme figure which shows the playback display TV program menu based on EPG data on the screen of a television receiver, the television receiver 50 carries out the isolation demodulation of the EPG data currently multiplexed by the transmitted TV signal, while storing the EPG data to which it demodulated, the programme menu which consists of the broadcast date

び放送番組名54等からなる番組メニューを表示されるようになってい  
る。テレビ画面に表示された番組表  
から図5(b)に示すリモートコント  
ロール端末(以下、リモコンという)55  
からのリモコン制御信号の基で番組  
の選択及び予約設定を行う。このリ  
モコン55の表面には、電源スイッチ  
56、テンキー57、メニュー表示指示  
スイッチ58、カーソル移動スイッチ5  
9、及び選択/決定スイッチ60が配  
置され、一方の側面にリモコン制御  
信号の送信手段61が配置されてい  
る。

**【0006】**

このリモコン55の回路構成は、図5  
(c)に示すようにマイクロコンピュ  
ータ(以下、CPUという)62と、制御手  
段63に前記各スイッチ56～60の操  
作に基づき操作信号を検出する電  
源スイッチ手段56'、テンキー手段5  
7'、メニュー表示指示手段58'、カ  
ーソル移動スイッチ手段59'、選択  
/決定スイッチ手段60'、及び前記  
送信手段61が接続され、各スイッチ  
56～60の操作に応じて、CPU62  
が制御手段63に格納されている各  
種制御信号を読み出し、送信手段6  
1からリモコン制御信号をテレビ受信  
機50に送信する。

51, a broadcast time slot 52, a broadcast  
channel number 53, and broadcast-program  
name 54 etc. can be displayed on a television  
screen. The selection of a programme and a  
reservation setting are performed by the  
bases of the remote-control control signal  
from the remote control terminal (henceforth a  
remote control) 55 shown in FIG.5(b) from the  
programme timetable displayed on the  
television screen. Power-supply switch 56, a  
key-pad 57, menu display instructions switch  
58, cursor movement switch 59, and  
selection/determination switch 60 are  
arranged at the surface of this remote control  
55, the transmitting means 61 of a  
remote-control control signal is arranged at  
one side face.

**[0006]**

Power-supply-switch means 56' to which a  
circuit structure of this remote control 55  
detects an operation signal at a  
microcomputer (henceforth CPU) 62 and the  
control means 63 based on operation of each  
said switch 56-60 as shown in FIG.5(c),  
key-pad means 57', menu display  
indication-means 58', cursor movement  
switch means 59', selection/determination  
switch means 60', and said transmitting  
means 61 are connected, according to  
operation of each switch 56-60, CPU62 reads  
the various control signal stored in the control  
means 63, a remote-control control signal is  
transmitted to the television receiver 50 from  
the transmitting means 61.

**【0007】**

つまり、電源スイッチ56が操作されると、電源スイッチ手段56'から操作信号がCPU62に伝達され、その電源操作信号に応じた制御信号を制御手段63から読み出し、送信手段61からテレビ受信機50の電源をオンにするリモコン制御信号を送信する。次に視聴する目的のチャンネルを表示させる場合(選局)は、0~12までの数字を有したテンキー57でチャンネル番号を入力するか、またはメニュー表示指示スイッチ58を操作し、予め受信機50に記憶されている番組メニューを画面上に表示させ、メニュー画面を見ながら前記テンキー57またはカーソルを上下左右に動かすカーソル移動スイッチ59を操作して、メニュー内をカーソルを移動させて目的の番組を検索する。前記リモコン50のスイッチを操作する度に、各スイッチに対応したリモコン制御信号を前記CPU62と制御手段63で生成して送信手段61から受信機50に送られ、最後に目的の番組が検索されると選択/決定スイッチ手段60を操作すると、送信手段61から目的の番組のEPGデータを受信機50に記憶する指示信号が送信され、受信機50の設けられた、図示していない記憶手段にその目的の番組のEPGデータを記憶し、記憶されたEPGデータの基で受信機50のテレビ番組の選局と動作を制御を行う。

**[0007]**

In other words, operation of power-supply switch 56 transmits an operation signal to CPU62 from power-supply-switch means 56', the control signal according to the power-supply operation signal is read from the control means 63, the remote-control control signal which turns ON the power supply of the television receiver 50 from the transmitting means 61 is transmitted. Next, when displaying a channel to view and listen (channel selection), a channel number is input with the key-pad 57 with the number to 0-12, or menu display instructions switch 58 is operated, the programme menu currently beforehand stored in receiver 50 is displayed on a screen. Cursor movement switch 59 which moves said key-pad 57 or said cursor vertically and horizontally is operated looking at menu panel, a cursor is moved for the inside of a menu and the target programme is searched. Whenever it operates the switch of said remote control 50, the remote-control control signal corresponding to each switch is generated by said CPU62 and said control means 63, and it is sent to receiver 50 from the transmitting means 61, when the target programme is finally searched and selection/determination switch means 60 will be operated, the instructions signal which stores the EPG data of the target programme in receiver 50 from the transmitting means 61 will be transmitted, the EPG data of the programme of the objective are stored in a memory means which is not illustrated by which receiver 50 was provided, a channel

selection and operation of the TV program of receiver 50 are controlled by the bases of the stored EPG data.

**[0008]**

すなわち、前記選択／決定スイッチと手段60、60'で選択決定された目的番組が現在放送されていない番組の場合には、その目的番組を視聴するために予約されたことになる。

**[0008]**

That is, when the objective programme by which selection determination was carried out by said selection/determination switch and said means 60,60' was a programme which is not broadcast now, it was reserved in order to view and listen to the objective programme.

**[0009]**

なお、前述の番組予約は、テレビ受信機の例を用いたが、ビデオカセットレコーダ(以下、VTRという)においても、同じ内容の機能と回路構成を有したリモコンで録画番組予約されており、前記番組表メニューをテレビ画面に表示し、録画予約番組のEPGデータをVTRの転送して記憶させたり、又は、VTRにEPGデータの復調記憶手段を設け、且つ、VTRの動作又は操作状態を示すディスプレイに番組表を表示して目的の番組を検索し、選択決定後のEPGデータをVTRに記憶している。

**[0009]**

In addition, the above-mentioned programme reservation used the example of a television receiver. However, also in the videocassette recorder (henceforth VTR), video-recording programme reservation is made with the remote control with the function of the same content, and a circuit structure, said programme timetable menu is displayed on a television screen, VTR transmits the EPG data of a video-recording reservation programme, and they are stored. Or the demodulation memory means of EPG data is provided at VTR, and a programme timetable is displayed on the display which shows operation or the operation state of VTR, and the target programme is searched, the EPG data after selection determination are stored in VTR.



【0010】

## 【発明が解決しようとする課題】

従来、EPGデータを用いたチャンネル選局操作及び番組予約は複雑であった。また、リモコンから受信機に送信されるリモコン制御信号に赤外線が用いられているために、リモコン赤外線信号の届く範囲、指向性が狭いため、決められた範囲で赤外線送信部を受信機に常に向けて操作しなければならなかった。更に、番組検索をする場合、画面上の番組メニュー上のカーソルを時間軸方向及びチャンネル軸方向の2次元に展開されたメニューを順次スクロールさせるため目的の番組を見つけるのに時間がかかる課題があった。

[0010]

## [PROBLEM TO BE SOLVED BY THE INVENTION]

Conventionally, channel selection operation and programme reservation using EPG data were complicated. Moreover, since infrared rays were used for the remote-control control signal transmitted to a receiver from a remote control, and the trajectory of a remote-control infrared signal and the directivity were narrow, in the decided range, the infrared transmission section always had to be directed to the receiver, and had to be operated. Furthermore, when a programme search was carried out, in order to scroll in order the menu expanded by the two dimensions of a time-axis direction and a channel axis direction in the cursor on the programme menu on a screen, the task which requires time for finding the target programme occurred.

【0011】

本発明は、リモコン内にEPGデータを取り込み、リモコン制御信号を受信機に送信する機能を有すると共に、簡単・容易な操作で番組検索することができる携帯型番組表示装置を提供することを目的とする。

[0011]

This invention takes in EPG data in a remote control, and it aims at providing the portable programme display device which can carry out a programme search by simple and easy operation while it has the function to transmit a remote-control control signal to a receiver.

【0012】

## 【課題を解決するための手段】

本発明は、テレビジョン信号に多重伝送されるテレビ番組表情報と、こ

[0012]

## [MEANS TO SOLVE THE PROBLEM]

In the programme reservation system which reserves the TV program which receives this

のテレビ番組表情報を用いて受信するテレビ番組を予約する番組予約システムにおいて、前記テレビジョン信号に多重伝送されるテレビ番組表情報を分離復調し、この分離復調したテレビ番組表情報を基に生成されたテレビ番組表データを有するテレビ番組表データ源から前記テレビ番組表データを取り込み記憶する記憶手段と、前記記憶手段に記憶されたテレビ番組表データを基に、放送チャンネルと放送時間を基準とした番組表を再生表示する表示手段と、前記表示手段に再生表示された番組表を放送チャンネルと放送時間を基準としてスクロールさせるスクロール手段と、前記表示手段に再生表示された番組表から予約番組を設定すると共に、予約番組データをテレビジョン信号受信機器に伝送する番組予約設定手段とを具備し、前記番組予約設定手段で設定した予約番組のテレビ番組データを用いて、テレビジョン信号受信機器が選局するテレビ番組を設定させる携帯型番組表示装置である。

invention using the television programme timetable information by which a multiplex transmission is carried out to a television signal, and this television programme timetable information, the isolation demodulation of the television programme timetable information by which a multiplex transmission is carried out to said television signal is carried out, a memory means to take in and store said television programme timetable data from the television programme timetable data resources which have the television programme timetable data generated based on this television programme timetable information that carried out the isolation demodulation, based on the television programme timetable data stored in said memory means, the display means which carries out the playback display of the programme timetable which made a broadcast channel and broadcasting hours standard, a scroll means to make said display means scroll a broadcast channel and broadcasting hours for the programme timetable by which the playback display was carried out as standard, while setting a reservation programme as said display means from the programme timetable by which the playback display was carried out, a programme reservation setting means to transmit reservation programme data to a television signal receiver device is comprised, it is the portable programme display device to which the TV program which a television signal receiver device selects is set using the TV program data of the reservation

programme set by said programme reservation setting means.

【0013】

【発明の実施の形態】

以下、図面を参照して本発明の実施の形態について詳細に説明する。図1は本発明に係る携帯型番組表示装置の一実施の形態を示し、図1(a)は全体構成を示す外観図、図1(b)は回路構成を示すブロック図である。

【0014】

図1(a)の放送受信機10はアンテナ11を介して、放送局から送られてくる映像と音声からなるテレビ信号とテレビ信号に多重されたテレビ番組表情報であるEPGデータを受信する。受信したテレビ信号は、図示されていないテレビ信号とEPGデータを分離復調し、テレビ信号の映像と音声は所定の信号処理回路で復調再生処理されて、映像はブラウン管又は液晶素子で構成されたテレビ画面12に再生表示され、音声はスピーカから再生出力される。前記EPGデータは受信機10の図示されていないEPGメモリに格納されると共に、番組メニューに編集されてテレビ画面12に再生表示する。又、前記EPGメモリに記憶されたEPGデータは、後述する携帯型番組表示装置13へEPGデータを有線あるいは無線で送信する機能と、携帯型

【0013】

【EMBODIMENT OF THE INVENTION】

Hereafter, with reference to drawing, Embodiment of this invention is demonstrated in detail. FIG. 1 shows one Embodiment of the portable programme display device based on this invention, FIG.1(a) is an external view which shows a whole structure, FIG.1(b) is a block diagram which shows a circuit structure.

【0014】

The broadcast receiver 10 of FIG.1(a) receives the EPG data which are the television programme timetable information multiplexed by the TV signal which consists of video sent from a broadcasting station, and audio through antenna 11, and the TV signal. The received TV signal carries out the isolation demodulation of a TV signal (not shown) and the EPG data, demodulation playback processing of the video and the audio of a TV signal is carried out in a predetermined signal-processing circuit, the playback display of the video is carried out on the television screen 12 comprised with the cathode ray tube or the liquid-crystal element, the playback output of the audio is carried out from a speaker. Said EPG data are edited into a programme menu, and carry out a playback display on the television screen 12 while they are stored in the EPG (not shown) memory of receiver 10. Moreover, the EPG data stored in

番組表示装置13から送信された番組選択データを受信する機能とを有している。

said EPG memory have the function to transmit EPG data to the portable programme display device 13 mentioned later by the cable or a radio, and the function to receive the programme selection data transmitted from the portable programme display device 13.

**[0015]**

図1(b)の携帯型番組表示装置13は、前記受信機10との間で信号又はデータを送受信する信号送受信手段14を介してEPGデータを取り込み記憶すると共に、EPGデータを基に生成した番組表メニューを表示するディスプレイ15、ディスプレイ15に表示された番組表のチャンネル番号を入力するテンキー16、番組表をスクロールさせるダイヤルスクロールキー17、スクロール方向切替スイッチ18、番組表から目的の視聴する番組を探索した後、番組視聴決定操作し、この視聴決定した番組のEPGデータを前記受信機10に伝送制御する決定／送信スイッチ19が配置されている。

**[0015]**

While the portable programme display device 13 of FIG.1(b) takes in and stores EPG data between said receivers 10 through a signal transmission and reception means 14 to transmit or receive a signal or data, display 15 which displays the programme timetable menu generated based on EPG data, the key-pad 16 which inputs the channel number of the programme timetable displayed on display 15, the dial scroll key 17, the scroll direction changeover switch 18 which scroll a programme timetable, after searching for the programme to which the objective views and listens from a programme timetable, programme viewing and listening determination operation is carried out, determination/transmitting switch 19 which carries out transmission control of the EPG data of this programme that carried out viewing and listening determination to said receiver 10 is arranged.

**[0016]**

この携帯型番組表装置13の回路構成は、図1(c)に示すように、前記信号送受信手段14の受信手段14'と送信手段14"、RAMまたは半導体

**[0016]**

A circuit structure of this portable programme timetable apparatus 13 is receiving means 14' and transmitting means 14" of said signal transmission and reception means 14 as

メモリで形成された記憶手段20、前記ディスプレイ15に表示される番組メニュー用の文字記号信号又は映像信号を生成供給する表示手段15'、前記テンキー16から入力されたチャンネル番号に応じて該当チャンネルの番組メニューを選択する制御信号を生成供給するテンキー手段16'、前記ダイヤルスクロールキー17の操作に応じて番組メニューを時間軸、又はチャンネル軸方向にスクロールさせる信号を生成供給する一次元スクロール手段17'、前記スクロール切替スイッチ18の操作に応じて、前記ダイヤルスクロールキー17によるスクロール方向を切替える信号を生成供給するスクロール方向切替手段18'、前記決定/送信スイッチ19の操作に応じて番組メニューから目的の番組が検索された際に、その目的番組のEPGデータを前記送信手段14"から伝送する制御信号を生成する決定/送信スイッチ手段19'、及び制御手段21とがCPU22接続されている。前記制御手段21とCPU22は、前記送受信手段14と受信機10とのデータ授受の信号制御や、前記記憶手段20に記憶されているEPGデータから前記表示手段15'を介してディスプレイ15に表示する番組表メニューを生成したり、前記各種キーやスイッチ16~19の操作に応じて制御信号を生成する。

shown in FIG.1(c), the memory means 20 formed by RAM or a semiconductor memory, display means 15' which carries out generation supply of the letter-symbol signal or video signal for programme menus displayed on said display 15, key-pad means 16' which carries out generation supply of the control signal which selects the programme menu of an applicable channel according to the channel number input from said key-pad 16, one dimensional scroll means 17' which carries out generation supply of the signal which makes a time-axis or a channel axis direction scroll a programme menu according to operation of said dial scroll key 17, scroll direction switching means 18' which carries out generation supply of the signal which changes the scroll direction by said dial scroll key 17 according to operation of said scroll changeover switch 18, determination/transmitting switch means 19' which generates the control signal which transmits the EPG data of the objective programme from said transmitting means 14" when the target programme is searched from a programme menu according to operation of said determination/transmitting switch 19, and the control means 21 is connected CPU22. The said control means 21 and said CPU22 generate the programme timetable menu displayed on display 15 through said display means 15' from the EPG data currently stored in the signal control of data transfer and said memory means 20 of said transmission and reception means 14 and said receiver 10, a control signal is generated according to

operation of each said type key and switch 16-19.

**[0017]**

次にこの携帯型番組表示装置13の動作について、図2を併用して説明する。

**[0017]**

Next, FIG. 2 is used together and demonstrated about operation of this portable programme display device 13.

**[0018]**

受信機10のEPGメモリからEPGデータを抽出し、携帯型番組表示装置13へEPGデータの番組に関する放送チャンネル、番組名、番組名、放送日、放送時間等のデータを送信する。このEPGデータの送受信に関しては、PHS方式の携帯電話または親子電話の無線機能を用いるか、又は、最近注目されているIEEE1394等のインターフェースを介したケーブルを利用したり、有線又はPHS以外の携帯電話回線、あるいは、赤外線通信を用いることも可能である。さらに、送信するEPGデータに関しても、通常放送局から送られてくるEPGデータには、放送局のロゴマークや番組内容を補足説明する画像データが含まれるが、画像データを含むとデータ量が多くなり、送受信に時間がかかるため、受信機10からの送信データとして、画像データを除去したEPGデータのみを更に抽出して携帯型番組表示装置13へ送信しても良い。

**[0018]**

EPG data are extracted from the EPG memory of receiver 10, data, such as the broadcast channel and programme name which are related to the programme of EPG data, a programme name, a broadcast day, and broadcasting hours, are transmitted to the portable programme display device 13. It relates to transmission and reception of this EPG data, and the radio function of the mobile telephone of a PHS system or a telephone base-station and mobile unit is used, or a cable is utilized via the interface of IEEE 1394 which attracts attention recently, a cable, mobile-telephone circuits other than PHS, or infrared transmission can also be used. Furthermore, it also relates to the EPG data to transmit and the image data which carries out parenthesis explanation of the logo mark and the content of a programme of the broadcasting station is contained in the EPG data normally sent from a broadcasting station. However, when image data is contained, a data amount will increase, since transmission and reception takes time, only the EPG data from which image data was removed may be further extracted as transmission data from receiver 10, and it is

sufficient to transmit to the portable programme display device 13.

**[0019]**

携帯型番組表示装置13では、受信機10から送信されたEPGデータを受信手段14'で受取り、記憶手段20に記憶する。記憶手段20では、図2(a)に示すように、受信したEPGデータをチャンネル軸方向と時間軸方向の2次元データの番組メニューとして仮想的に編集して記憶する。携帯型番組表示装置13の動作電源がオンされると、前記記憶手段20に記憶されている番組表メニューの予め設定しておいた初期チャンネルの番組表に関するデータを表示手段15'に出力する。例えば、図1(a)のディスプレイ15に示すように、電源をオンにした時間帯のチャンネル100chで放送している番組に関するEPGデータ(放送チャンネル、放送日、放送時間、番組名、番組内容など)を表示する。

**[0019]**

In the portable programme display device 13, the EPG data transmitted from receiver 10 are received by receiving means 14', and it stores in the memory means 20. By the memory means 20, as shown in FIG.2(a), the received EPG data are virtually edited as a programme menu of the two dimensional data of a channel axis direction and a time-axis direction, and are stored. When the operation power supply of the portable programme display device 13 is switched on, the data related to the programme timetable of the initial-stage channel which the programme timetable menu currently stored in said memory means 20 set beforehand will be output to display means 15'. For example, the EPG data (a broadcast channel, a broadcast day, broadcasting hours, a programme name, the content of a programme, etc.) related to the programme which is broadcasting the power supply by channel 100ch of the time zone made on as shown in display 15 of FIG.1(a) are displayed.

**[0020]**

このディスプレイ15に表示された番組データから視聴する番組を検索する場合、一次元スクロール手段17'であるダイヤルスクロールスイッチ17を操作する。このダイヤルスクロールスイッチ17は、ダイヤルを回転操作する事によりチャンネル軸方向

**[0020]**

When searching the programme to which it views and listens from the programme data displayed on this display 15, dial scroll switch 17 which is one dimensional scroll means 17' is operated. This dial scroll switch 17 scrolls to a channel axis direction by carrying out rotation operation of the dial, when it is made

にスクロールし、右回りに回転させる  
とチャンネル番号の小さい方向から  
大きい方向へスクロールし、左回り  
に回転させるとチャンネル番号の大  
きい方向から小さい方向へスクロ  
ールして順次異なるチャンネルの番組  
を表示する。途中、スクロール方向  
切替え手段18'のスクロール切替ス  
イッチ18を操作すると、番組メニ  
ューのスクロール方向をチャンネル軸  
方向から時間軸方向に切り換えら  
れ、ダイヤルを左回りに回転させると  
時間軸に対して早い時間方向にス  
クロールし、右回りに回転させると遅  
い時間方向にスクロールして、順次  
異なる時間帯の番組を表示する。

to rotate in the clockwise direction, it will scroll  
from a direction with a small channel number  
to a large direction, when it is made to rotate  
in the counterclockwise direction, the  
programme of a channel which scrolls to a  
small direction and is different in order from a  
direction with a large channel number will be  
displayed. Mid-way, operation of the scroll  
changeover switch 18' switches the scroll  
direction of a programme menu to a time-axis  
direction from a channel axis direction, when  
a dial is rotated in the counterclockwise  
direction, it will scroll to an early time direction  
with respect to a time-axis, when it is made to  
rotate in the clockwise direction, it will scroll to  
an late time direction, the programme of a  
different time zone one by one is displayed.

**[0021]**

前記受信機10で視聴する番組を予  
約する場合には、前記携帯型番組  
表示装置13のディスプレイ15に表  
示された番組表メニューをスクロ  
ールさせて、受信再生する目的の番  
組が表示された際に、前記決定/  
送信スイッチ19を操作し、決定/  
送信スイッチ手段19'から制御信号が  
生成供給されて、選択された番組の  
データを読み取り、送信手段14"か  
らリモコン制御信号を受信機10に  
送信する。選択番組が現在放送中  
であれば、受信機10は、その選択  
番組にチャンネルを切り替わるよう  
にリモコン制御信号を送出し、選択  
番組がこれから放送予定の番組の

**[0021]**

When reserving the programme to which it  
views and listens with said receiver 10, the  
programme timetable menu displayed on  
display 15 of said portable programme  
display device 13 is scrolled, when a  
programme to carry out a reception playback  
is displayed, said determination/transmitting  
switch 19 is operated, generation supply of  
the control signal is carried out from  
determination/transmitting switch means 19',  
the data of the selected programme are read  
and a remote-control control signal is  
transmitted to receiver 10 from transmitting  
means 14". If a selected programme is  
broadcasting now, receiver 10 will send a  
remote-control control signal so that a



場合は、番組予約を行うリモコン制御信号を送信手段14から送出する。これにより、受信機10では番組予約を行うリモコン制御信号と共に送出された予約番組EPGデータは、受信機10の番組予約メモリに記憶される。

channel may be switched in the selected programme, the remote-control control signal with which a selected programme performs programme reservation after this in the case of the programme of a broadcast plan is sent out from the transmitting means 14. Thereby, in receiver 10, the reservation programme EPG data sent with the remote-control control signal which performs programme reservation are stored in the programme reservation memory of receiver 10.

**[0022]**

以上の各手段の制御は、制御手段21とCPU22の制御で行われ、その制御処理手順の内、番組メニューのスクロールは、図2(b)のフローチャートでしめしており、前記ダイヤルスクロールスイッチ17が操作されると、ステップS1でスクロール処理モードが読み出され、初期設定の方向に番組メニューをスクロールする。次に、スクロールの途中でスクロール方向切替スイッチ18が操作されると、ステップS2でスクロール方向切替確認され、ステップS3でスクロール方向を初期のスクロール軸(例えば、チャンネル軸方向)から異なるスクロール軸(時間軸方向)に切り換えて、スクロールを継続する。次にステップS4で決定/送信スイッチ19の操作により、選択番組が決定すると、ステップS5で選択番組データを送信手段14から送出し、受信機10で選択番組の視聴が可能となる。

**[0022]**

Control of each above means is performed by control of the control means 21 and CPU22, the scroll of a programme menu is being shown with the flowchart of FIG.2(b) among the control processing procedure, operation of said dial scroll switch 17 reads scroll processing mode in step S1, a programme menu is scrolled to an initialization direction. Next, when the scroll direction changeover switch 18 is operated in the middle of a scroll, a scroll direction switching confirmation will be carried out in step S2, a scroll direction is switched to a scroll axis (time-axis direction) which is different from the scroll axis (for example, channel axis direction) of an initial stage in step S3, and a scroll is continued. Next, when a selected programme determines by operation of determination/transmitting switch 19 by step S4, selected programme data will be sent from transmitting means 14 in step S5, viewing and listening of a selected programme is attained with receiver 10.

**[0023]**

この実施形態において、一次元スクロール手段17'として、ダイヤル式のスイッチ17を例に用いて説明したが、番組メニューを一次元方向に動かすことのできる操作スイッチでも良く、例えば、2個のスイッチで構成し、どちらかのスイッチを操作することにより対応した方向に番組メニューをスクロール動作できる操作手段でも実現可能である。

**[0024]**

次に本発明の他の実施形態について図3を用いて説明する。なお図1と同じ部分は同一符号を付し、その詳細説明は省略する。

**[0025]**

図3(a)の他の実施形態の携帯型番組表示装置13'の外観構成は、図1の本発明の一実施形態のダイヤルスクロールスイッチ17とスクロール切替スイッチ18に換えて、番組表を時間軸方向にスクロールさせる上下スイッチと、番組表をチャンネル軸方向にスクロールさせる左右スイッチの4個のスイッチで構成された上下／左右スイッチ23と、テンキー16又は上下／左右スイッチ23と組み合わせさせて番組表を高速に検索スクロールさせるジャンプ機能を有したジャンプスイッチ24が設けられ、回路構成は、図3(b)に示すように、上下

**[0023]**

In this Embodiment, as one dimensional scroll means 17', switch 17 of a dial -type was used for the example, and was demonstrated. However, the operation switch which can move a programme menu to one dimensional direction may be used, for example, it comprises by two switches, a programme menu is realizable for the direction which corresponded by operating one of switches also by the operation means which can carry out scroll operation.

**[0024]**

Next, another Embodiment of this invention is demonstrated using FIG. 3. In addition, the same part as FIG. 1 attaches the same code, the detailed description is omitted.

**[0025]**

An external-appearance structure of portable programme display-device 13' of another Embodiment of FIG.3(a) becomes like this. Dial scroll switch 17 of one Embodiment of this invention of FIG. 1, it changes to the scroll changeover switch 18, the up-and-down switch which makes a time-axis direction scroll a programme timetable, upper and lower sides / right and left switch 23 comprised by the 4 switch of the right and left switch which makes a channel axis direction scroll a programme timetable, jump switch 24 with the jump function which combines with a key-pad 16 or upper and lower sides / right and left switch 23, and carries out search

／左右スイッチ23の操作に応じて番組メニューをスクロールさせる制御信号を生成供給する上下／左右スイッチ手段23'と、前記ジャンプスイッチ24の操作に応じて番組メニューを高速検索スクロールさせる制御信号を生成供給するジャンプスイッチ手段24'を設けている。

scroll of the programme timetable at high speed is provided, the circuit structure has provided jump switch means 24' which supplies generation of control signal which does high-speed search scroll of programme menu according to upper and lower sides / right and left switch means 23' which carries out generation supply of control signal which scrolls programme menu according to operation of upper and lower sides / right and left switch 23 as shown in FIG.3(b), and operation of said jump switch 24.

**[0026]**

この携帯型番組表示装置13'の動作は、図4を併用して説明する。受信機10から送信されたEPGデータを受信手段14'で受取り、RAMや半導体メモリなどの記憶手段20に記憶する。記憶手段20では、図4(a)に示すように受信したEPGデータをチャンネル軸方向と時間軸方向の2次元データの番組メニューに仮想的に編集して記憶する。前記携帯型番組表示装置13'の電源がオンされると、前記番組表メニューの予め設定された番組、例えば、図4(a)の番組C3)に関する番組データが表示手段15'から映像信号に変換されてディスプレイ15に表示されているとする。この状態から、前記上下／左右スイッチ23の4個の各スイッチを操作すると、番組表の2次元データ内を上下左右それぞれ対応した方向に順次スクロールさせる事ができる。

**[0026]**

Operation of this portable programme display-device 13' is used together and is demonstrated FIG. 4. The EPG data transmitted from receiver 10 are received by receiving means 14', and it stores in the memory means 20, such as RAM and a semiconductor memory. By the memory means 20, the EPG data received as shown in FIG.4(a) are virtually edited into the programme menu of the two dimensional data of a channel axis direction and a time-axis direction, and are stored in it. When the power supply of said portable programme display-device 13' is switched on, it is the predetermined programme of said programme timetable menu, for example, suppose that the programme data related to the programme C3 of FIG.4(a) are converted into a video signal from display means 15', and it displays on display 15. When 4 each switch of said upper and lower sides / right and left switch 23 is operated from this state,

the direction to which four directions respectively corresponded can be made to scroll the inside of the two dimensional data of a programme timetable in order.

**【0027】**

次に、ジャンプスイッチ手段24'の機能について説明する。このジャンプスイッチ手段24'には、2種類の操作機能を有しており、第1の操作機能は、ジャンプスイッチ24を操作した後、前記テンキー16を操作すると、テンキー16の各キーに初期設定しておいたチャンネルの現在放送している番組データを表示する。例えば、ジャンプスイッチ24を操作した後、テンキー16のキー「1」を操作するとチャンネル番号100の現時刻に放送している番組データを表示し、ジャンプスイッチ24を操作した後、テンキー16のキー「2」を押すとチャンネル番号200の現時刻に放送している番組データを表示し、ジャンプスイッチ24を操作した後、テンキー16のキー「3」を押すとチャンネル番号300の現時刻に放送している番組データを表示する。

**[0027]**

Next, the function of jump switch means 24' is demonstrated. In this jump switch means 24', it has the operation function of two types, after first operation function's operating jump switch 24, when said key-pad 16 is operated, the channel initialized to each key of a key-pad 16 displays the programme data broadcast now. For example, after operating jump switch 24, the programme data currently broadcast as operating key "1" of a key-pad 16 at the present time of the channel number 100 are displayed, after operating jump switch 24, the programme data currently broadcast as pushing key "2" of a key-pad 16 at the present time of a channel number 200 are displayed, after operating jump switch 24, the programme data currently broadcast as pushing key "3" of a key-pad 16 at the present time of the channel number 300 are displayed.

**【0028】**

更にジャンプスイッチ手段24'の第2の機能は、ジャンプスイッチ24を連続して2回操作した後、2次元データ内の時間軸方向に予め設定しておいた時間間隔で表示を切替えることができる。例えば、設定時間間隔が3時間であり、表示手段15'に

**[0028]**

Furthermore, the second function of jump switch means 24' can change a display with the time interval beforehand set as the time-axis direction in two dimensional data, after operating jump switch 24 twice continuously. For example, a setup-time interval is three hours. When displaying the

図4(a)に示す番組E1に関する番組データを表示している場合、ジャンプ・スイッチ24を2回連続して操作すると、同じチャンネルの3時間後の番組E4の番組データを表示する。更にジャンプスイッチ24を2回連続して操作すると、同じチャンネルの更に3時間後の番組データを表示する。

programme data related to the programme E1 shown to display means 15' at FIG.4(a) and jump switch 24 is operated twice continuously, the programme data of the programme E4 three hours after the same channel will be displayed. Furthermore, when jump switch 24 is operated twice continuously, the programme data of the same channel and also three hours after will be displayed.

**【0029】**

なお、前記ジャンプスイッチ24の連続2回操作時のジャンプ時間間隔を、例えば3時間間隔から5時間間隔に変更する場合は、ジャンプスイッチ24の2回連続操作を行った後、テンキー16のキー「5」を操作すると現在表示手段15'に表示されている番組データから5時間後の番組データの表示にジャンプして表示される。

**[0029]**

In addition, the jump time interval at the time of continuous two-times operation of said jump switch 24 is jumped to the display of the programme data five hours after the programme data currently displayed on present display means 15' when key "5" of a key-pad 16 is operated after performing two-times continuous operation of jump switch 24, when changing into five time intervals from three time intervals, and it displays.

**【0030】**

このジャンプスイッチ手段24'の動作処理手順について、図4(b)のフローチャートを用いて説明する。

**[0030]**

The operation processing procedure of this jump switch means 24' is demonstrated using the flowchart of FIG.4(b).

**【0031】**

ジャンプスイッチ24が操作されると、ステップS11でジャンプスイッチ24の操作を認識する。ステップS11で認識した操作は、ステップS12でジャンプスイッチ24の操作は2回連続操作であるかを確認する。このステ

**[0031]**

Operation of jump switch 24 recognizes operation of jump switch 24 in step S11. Operation recognized in step S11 confirms whether operation of jump switch 24 is two-times continuous operation in step S12. When it recognizes as said jump switch 24

ップS12での確認の結果、前記ジャンプスイッチ24は1回操作であると認識されると、ステップS13に移行し、テンキー16が操作され、この操作されたキーを認識する。ステップS13で操作されたテンキー16のキーが認識されると、ステップS14で前記テンキー16のキーに設定されているチャンネルの現時間の番組データを表示する。前記ステップS12でジャンプスイッチ24が連続2回操作されたことを認識すると、ステップS15により、現在表示されているチャンネルの予め設定された時間後の番組データにジャンプして表示する。次にステップS16でテンキー16からキー入力されたか認識し、テンキー16のキー入力が認識されるとジャンプする時間間隔の変更と認識して、ステップS17で現在表示されているチャンネルのステップS16で入力された時間後の番組データを表示する。

**[0032]**

これにより、チャンネル軸又は時間軸毎にスクロールすることなく、現在表示されているチャンネルの番組データから離れたチャンネルの番組データへとジャンプでき、且つ、時間帯の異なる番組データへとジャンプされるために、所望の番組データの探索が迅速にできる。

being one-time operation as a result of a confirmation in this step S12, it will transfer to step S13, a key-pad 16 is operated, this operated key is recognized. Recognition of the key of the key-pad 16 operated in step S13 displays the programme data between the present time of the channel set as the key of said key-pad 16 in step S14. When it recognizes that jump switch 24 was continuously operated twice in said step S12, by step S15, it jumps and displays on the programme data after the predetermined time of the channel displayed now. Next, it is recognized whether the keystroke was carried out from the key-pad 16 in step S16, it recognizes as a change of the time interval which will be jumped when the keystroke of a key-pad 16 is recognized, the programme data after the time input in step S16 of the channel displayed in step S17 now are displayed.

**[0032]**

Thereby, it can jump to the programme data of a channel which are separated from the programme data of the channel displayed now, without scrolling for each channel axis or time-axis, and since it is jumped to the programme data which differ in a time zone, the search of requirement programme data can be performed rapidly.

**[0033]**

なお、ジャンプスイッチ24の操作により、特定のチャンネルの特定の番組にジャンプ移動後、時間軸方向またはチャンネル軸方向に前記上下／左右スイッチ23を用いて順次スクロールさせることも可能であることは明らかである。

**[0033]**

In addition, it is clear that said upper and lower sides / right and left switch 23 can be used for the specific programme of a specific channel at after a jump movement, a time-axis direction, or a channel axis direction, and it can also be made to scroll in order by operation of jump switch 24.

**[0034]**

このようにして所望の番組を探索し、目的の番組データが前記表示手段15'からディスプレイ15に表示されると、決定／送信スイッチ18を操作し、決定／送信手段18'は、前記表示手段15'から表示されている番組データを読み取り、送信手段14"から受信機10に対してチャンネル選択のリモコン信号を送信する。この時、選択番組が現在放送中であれば、受信機10がチャンネルを選択番組に切り替わるようにリモコン信号を送信手段14"から送出する。選択した番組がこれから放送予定の番組の場合は、番組予約を行うリモコン信号を送信手段14"から送出し、受信機10の番組予約データ記憶用メモリに記憶させる。

**[0034]**

Thus, it searches for a requirement programme, when the target programme data are displayed on display 15 from said display means 15', determination/transmitting switch 18 will be operated, determination/transmitting means 18' reads the programme data currently displayed from said display means 15', and transmits the remote-control signal of a channel selection with respect to receiver 10 from transmitting means 14". If a selected programme is broadcasting now at this time, a remote-control signal is sent out from transmitting means 14" so that receiver 10 may switch a channel in a selected programme. In the case of the programme of a broadcast plan, the selected programme sends after this the remote-control signal which performs programme reservation from transmitting means 14", it is made to store in the memory for programme reservation data storage of receiver 10.

**[0035]**

なお、図2(a)と図4(a)に示した記憶手段20に記憶されているEPGデ

**[0035]**

In addition, the EPG data currently stored in the memory means 20 shown in FIG.2(a) and

ータの仮想的に2次元展開データを用い、この2次元展開データをスクロールさせた際に、2次元展開データの端部に到達した場合、そこでスクロールをできないように設定することもできるが、対边上のデータに移動し表示させることも可能である。つまり、図2を用いて説明すると、番組C3を表示していて、チャンネル軸方向にスクロールさせ、番組E3に到達した場合、更にスクロール命令を受けると対边上の番組A3のEPGデータを表示させ、番組C3から時間軸方向にスクロールしていき番組C5に到達した場合、更にスクロール命令を受けると対边上の番組C1のEPGデータを表示させる。又、前記ジャンプスイッチ24を用いた特定の間隔でジャンプスクロールさせた際も、端部に達した際には、対边上の番組にジャンプするように設定することも可能である。これにより、ユーザが番組選択するために、番組表を時間軸又はチャンネル軸のいずれかにスクロールさせ、所望の番組が発見できなく端部に達した際に、前記スクロールの方向を変えて再度同じ番組データを見ながら番組検索する必要がなく、番組検索の効率向上となる。

FIG.4(a) use two dimensional expanded data virtually, when scrolling this two dimensional expanded data and it arrives at the edge part of two dimensional expanded data, it can also set so that a scroll may be impossible there. However, it can also be made to move and display on the data on the opposite side. In other words, when it demonstrates using FIG. 2, the programme C3 will be displayed, a channel axis direction is scrolled. When a programme E3 is attained, and a scroll command is received further, the EPG data of programme A3 on the opposite side will be displayed. When it scrolls from the programme C3 to the time-axis direction, and a programme C5 is attained, and a scroll command is received further, the EPG data of the programme C1 on the opposite side will be displayed. Moreover, when carrying out a jump scroll by the specific interval using said jump switch 24 and an edge part is arrived at, it can also set so that it may jump in the programme on the opposite side. Thereby, in order that a user may make a programme selection, any one of a time-axis or a channel axis is made to scroll a programme timetable. When a requirement programme cannot be discovered and an edge part is arrived at, it is not necessary to carry out a programme search, changing the direction of said scroll and looking at the same programme data again, it becomes the efficiency improvement of a programme search.



## 【0036】

さらに、本発明の応用例としては、前記番組表示装置の13、13'の記憶手段20は、半導体記憶素子を内蔵したカード等の半導体記憶媒体とし、その半導体記憶媒体は、前記携帯型番組表示装置13、13'に着脱自在に装着できるようにする。前記半導体記憶媒体は、前記受信機10で分離復調したテレビ番組表情報を基に生成されたテレビ番組データを記憶し、その半導体記憶媒体に記憶されたテレビ番組表データを前記委魚手段21とCPU22の制御の基で読み出して前記表示手段15'に番組表として表示すると共に、前記番組表をスクロールして前記決定／送信手段18'で選択した予約番組データを前記半導体記憶媒体に書き込む。前記予約番組データが書き込まれた半導体記憶媒体から前記受信機10で予約番組データを読み取り受信機10の番組選択制御として用いることにより、前記受信機10と前記番組表示装置13、13'との間のデータ送受信のための有線又は無線によるデータ伝送回線は不要とすることも可能である。

## 【0037】

又、上記の本発明の説明において

## [0036]

Furthermore, let the memory means 20 of 13,13' of said programme display device be semiconductor storage media, such as a card incorporating a semiconductor memory element, as an application example of this invention, the semiconductor storage medium can be detachably mounted to said portable programme display-device 13,13'. Said semiconductor storage medium stores the TV program data generated based on the television programme timetable information which carried out the isolation demodulation with said receiver 10, while reading by the bases of control of the television programme timetable data stored in the semiconductor storage medium of said control means 21 and said CPU22 and displaying on said display means 15' as a programme timetable, the reservation programme data which scrolled said programme timetable and were selected by said determination/transmitting means 18' are written into said semiconductor storage medium. By reading reservation programme data in the semiconductor storage medium with which said reservation programme data were written with said receiver 10, and using as programme selection control of receiver 10, the data-transmission circuit by the cable or radio for the data transmission and reception between said receiver 10 and said programme display-device 13,13' can also be made unnecessary.

## [0037]

Moreover, in description of said this invention,

は、表示手段14'からディスプレイ14に出力表示される番組データは、一つのチャンネルの一つの番組データが表示されている例を用いて説明したが、2つ以上のチャンネルや番組を表示するようにすることも可能であることは明らかである。

the programme data by which an output display is carried out were demonstrated to display 14 using the example on which the one programme data of a one channel are displayed from display means 14'. However, it is clear that two or more channels and a programme can be displayed.

【0038】

【0038】

【発明の効果】

EPGデータを基に番組表メニュー作成し、この番組表メニューをディスプレイに表示する携帯型番組表示装置において、番組表メニューで表示される番組データを上下左右に位置移動するスクロール操作は、一次元方向のスクロール手段と、スクロール方向切替え手段又はジャンプ手段を操作するだけで番組検索の操作が簡単で、且つ迅速に番組選択が可能となる効果を有している。

【ADVANTAGE OF THE INVENTION】

Programme timetable menu preparation is carried out based on EPG data, in the portable programme display device which displays this programme timetable menu on a display, scroll operation which carries out the position shift of the programme data displayed with a programme timetable menu vertically and horizontally is the scroll means of one dimensional direction, operation of a programme search is simple only by operating a scroll direction change means or a jump means, and it has the effect whose programme selection is attained rapidly.

【図面の簡単な説明】

【BRIEF DESCRIPTION OF THE DRAWINGS】

【図1】

本発明に係る携帯型番組表示装置の一実施の形態を示し、図1(a)は全体構成を示す外觀図、図1(b)は携帯型番組表示装置の回路構成を示すブロック図。

【FIG. 1】

One Embodiment of the portable programme display device based on this invention is shown, FIG.1(a) is an external view which shows a whole structure, FIG.1(b) is a block diagram which shows a circuit structure of a portable programme display device.

## 【図2】

本発明の一実施形態の動作説明に用い、図2(a)はテレビ番組データから生成した番組図、図2(b)はスクロール動作を示すフローチャート。

## [FIG. 2]

It is the programme figure which used for the operation description of one Embodiment of this invention, and generated FIG.2(a) from TV program data, FIG.2(b) is a flowchart which shows scroll operation.

## 【図3】

本発明に係る携帯型表示装置の他の実施形態を示し、図3(a)は全体構成を示す外観図、図3(b)は携帯型番組表示装置の回路構成を示すブロック図。

## [FIG. 3]

Another Embodiment of the portable display device based on this invention is shown, FIG.3(a) is an external view which shows a whole structure, FIG.3(b) is a block diagram which shows a circuit structure of a portable programme display device.

## 【図4】

本発明の他の実施形態の動作説明に用い、図4(a)はテレビ番組データから生成した番組図、図4(b)はスクロール動作を示すフローチャート。

## [FIG. 4]

It is the programme figure which used for the operation description of another Embodiment of this invention, and generated FIG.4(a) from TV program data, FIG.4(b) is a flowchart which shows scroll operation.

## 【図5】

従来の番組予約機能を有する受信システムを説明するためのブロック図。

## [FIG. 5]

The block diagram for demonstrating the receiving system which has the conventional programme reservation function.

## 【符号の説明】

10…受信機器、11…アンテナ、12…テレビ画面、13…携帯型番組表示装置、14…送受信手段、14'…受信手段、14"…送信手段、15…ディスプレイ、15'…表示手段、16…テンキー、16'…テンキー手段、17…ダイヤルスクロールスイッチ、17'…一次元スクロール手段、18…

## [DESCRIPTION OF SYMBOLS]

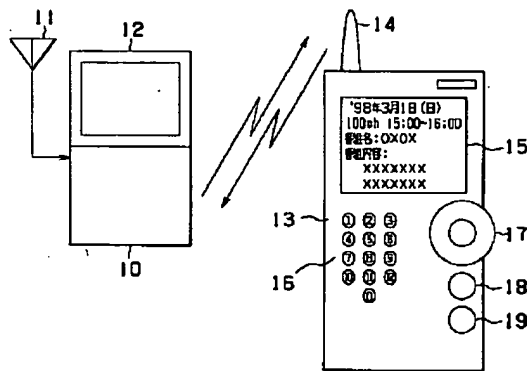
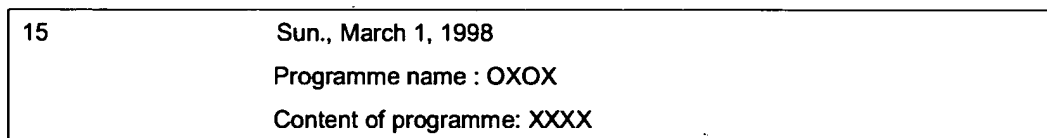
10... Receiver device, 11... Antenna, 12... Television screen, 13... Portable programme display device, 14... Transmission and reception means, 14'... Receiving means, 14"... Transmitting means, 15... Display, 15'... Display means, 16... Key-pad, 16'... Key-pad means, 17... Dial scroll switch, 17'... One-dimensional scroll means, 18... Scroll

スクロール切替スイッチ、18'...スクロール切替手段、19'...決定/送信スイッチ、19'...決定/送信手段、20...記憶手段、21...制御手段、22...マイクロコンピュータ。

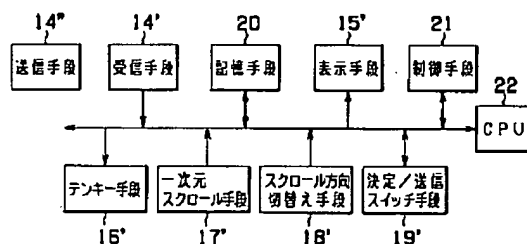
changeover switch, 18'... Scroll switching means, 19... Determination/transmitting switch, 19'... Determination/transmitting switch means, 20... Memory means, 21... Control means, 22... Microcomputer.

【図1】

[FIG. 1]



(a)



(b)

14'' Transmitting means	14' Receiving means	20 Memory means	15' Display means	21 Control means
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16' Key-pad means	17' One-dimensional scroll means	18' Scroll direction switching means	19' Determination/transmission switch means
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【図2】

[FIG. 2]

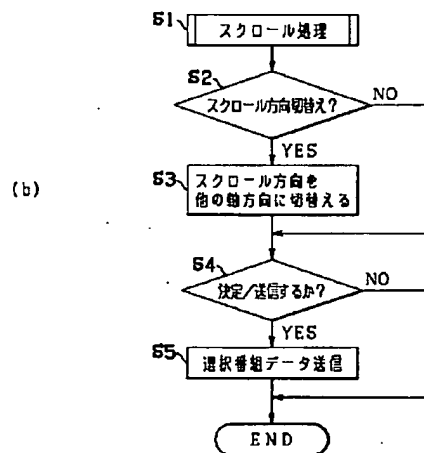
Channel axis direction					
Time-axis direction		Channel 101	Channel 102...		
	6:00-7:00	Programme A1	Programme B1 ...		

チャンネル軸方向

←————→

(a)

	101ch	102ch	103ch	104ch	105ch
時間軸方向	番組A1	番組B1	番組C1	番組D1	番組E1
6:00~7:00	番組A1	番組B1	番組C1	番組D1	番組E1
7:00~8:00	番組A2	番組B2	番組C2	番組D2	番組E2
8:00~9:00	番組A3	番組B3	番組C3	番組D3	番組E3
9:00~10:00	番組A4	番組B4	番組C4	番組D4	番組E4
10:00~11:00	番組A5	番組B5	番組C5	番組D5	番組E5



- S1 Scroll processing
- S2 Scroll direction switching?
- S3 Scroll direction switched to another axis direction.
- S4 Determine/transmit?
- S5 Selection programme data transmission

【図4】

[FIG. 4]

Channel axis direction						
Time-axis direction		Channel 100	...	Channel 200	...	Channel 300
	6:00~7:00	Programme A1	...	Programme C1	...	Programme E1

チャンネル軸方向

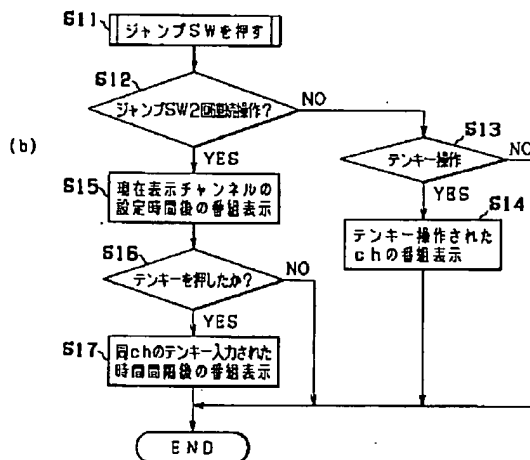
↓

(a)

	100ch	...	200ch	...	300ch
6:00~7:00	番組A1	...	番組C1	...	番組E1
7:00~8:00	番組A2	...	番組C2	...	番組E2
8:00~9:00	番組A3	...	番組C3	...	番組E3
9:00~10:00	番組A4	...	番組C4	...	番組E4
10:00~11:00	番組A5	...	番組C5	...	番組E5

時間軸方向

↑



S11 Jump SW is pushed.

S12 Two jump SW continuous operation?

S15 Programme display after setup time of present display channel

S16 Key-pad pushed?

S17 Programme display after time interval by which key-pad input of this ch was carried out

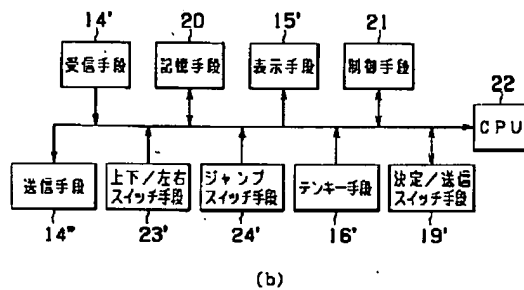
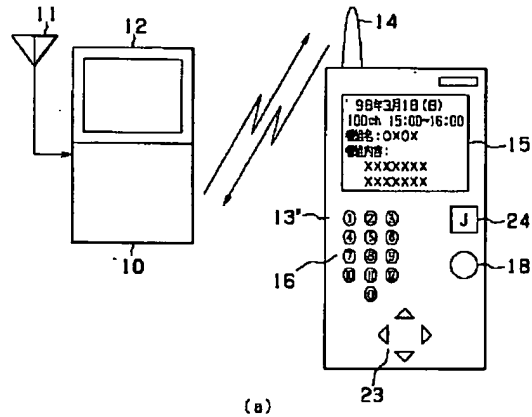
S13 Key-pad operation

S14 Programme display of ch by which key-pad operation was carried out

【図3】

[FIG. 3]

15	Sun., March 1, 1998
	Programme name : OXOX
	Content of programme: XXXX



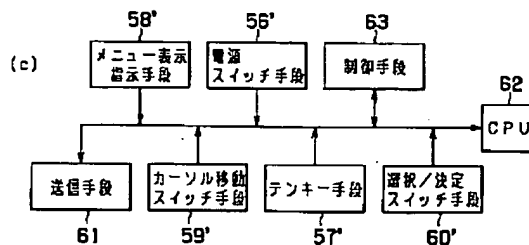
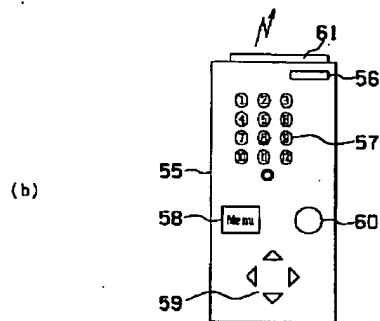
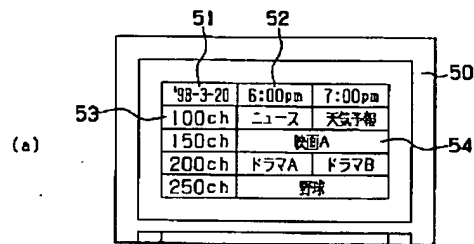
14' Receiving means	20 Memory means	15' Display means	21 Control means
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14'' Transmitting means	23' Upper and lower sides / right and left switch means	24' Jump switch means	16' Key-pad means	19' Determination/transmission switch means
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【図5】

[FIG. 5]

News	Weather report
Movie A	
Drama A	Drama B
Baseball	



58'	Menu display indication means	56'	Power-supply-switch means	63	Control means
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61	Transmitting means	59'	Cursor movement switch means	57'	Key-pad means	60'	Selection/determination switch means
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